

PAPERS
OF THE
PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY
AND ETHNOLOGY, HARVARD UNIVERSITY

VOL. XIII — No. 3

THE RACIAL CHARACTERISTICS
OF SYRIANS AND ARMENIANS

BASED UPON DATA COLLECTED BY
W. B. CLINE, C. S. COON, J. M. ANDREWS, AND W. C. DUPERTUIS

BY
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H452 Vol 13 - no 3

82/36

H47 29/4/36.

Reg 112-773
6.1.36

913.73

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CAMBRIDGE, MASSACHUSETTS, U.S.A.
PUBLISHED BY THE MUSEUM

1936

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CAMBRIDGE, MASS., U. S. A.

PEABODY MUSEUM
OF
AMERICAN ARCHAEOLOGY AND ETHNOLOGY
HARVARD UNIVERSITY

PAPERS

VOLUME XIII

CAMBRIDGE, MASSACHUSETTS, U. S. A.
PUBLISHED BY THE MUSEUM
1931-1933-1936



CONTENTS OF VOLUME XIII

NUMBER 1

MAYA-SPANISH CROSSES IN YUCATAN

BY GEORGE D. WILLIAMS

NUMBER 2

THE PHONETIC VALUE OF CERTAIN CHARACTERS IN MAYA WRITING

BY BENJAMIN LEE WHORF

NUMBER 3

THE RACIAL CHARACTERISTICS OF SYRIANS AND ARMENIANS

BY CARL C. SELTZER

CONTENTS

INTRODUCTION	v
AGE	1
METRICAL ANALYSIS OF THE MATERIAL	
Measurements and Indices of the Body	2
Measurements and Indices of the Head and Face	8
Conclusions of the Metrical Analysis	31
MORPHOLOGICAL OBSERVATIONS	36
CONCLUSIONS OF THE MORPHOLOGICAL ANALYSIS	54
GENERAL ANALYSIS OF THE ARMENIAN MATERIAL	56
GENERAL ANALYSIS OF THE SYRIAN MATERIAL	68
BIBLIOGRAPHY	76



INTRODUCTION

THE material for this monograph was collected by two different investigators on two separate occasions. Owing to the generosity and assistance of the Bureau of International Research of Harvard University and Radcliffe College, the Syrian series was measured, during the fall of 1928, by Mr. Walter B. Cline, Tutor and Instructor in Anthropology at Harvard University.¹ Engaged in an ethnographical reconnaissance of the Near East, Mr. Cline availed himself of the opportunity to collect data on the physical anthropology of 263 adult members of the male population of Syria. The majority of individuals in this series were measured in the city of Beirut and the districts in its immediate vicinity. However, a group of considerable size was examined in the villages and hamlets of the uplands and mountains to the east.

The Armenian data were gathered in Boston, Massachusetts, in the fall of 1931, by Dr. Carleton S. Coon, with the assistance of Mr. J. M. Andrews and Mr. W. C. Dupertuis. Of the 101 adult male Armenians measured, all were alleged to have been adults on their arrival in the United States. No American-born Armenians, nor Armenians who had not reached maturity on departure from their native country, were included in this series. These Armenian data are therefore strictly comparable to any material collected for the same group in Armenia proper.

At the suggestion of Dr. Coon, it was decided that the results of the study of the Armenian data should be incorporated in the same manuscript with the Syrian material. Accordingly, he very kindly turned over to me his calculations of the measurements, indices, and observations of the Armenians (i.e. means, standard deviations, coefficients of variation, and their probable errors) as well as some of his data dealing with the racial analysis. I have utilized his calculations intact in the presentation of the material. Of his other data, I have had recourse to his methodology in connection with the metrical analysis of eye color, although the figures given are mine. I therefore wish to make grateful acknowledgment to Dr. Coon for

¹ The author is very grateful to the Bureau of International Research of Harvard University and Radcliffe College, as well as to the Peabody Museum of Harvard University, for grants which permitted the publication of this manuscript.

the use of all the material which he placed at my disposal as well as for his valuable suggestions.

Inasmuch as the investigators for both series received their anthropometric training in the same laboratory, we can safely assume that comparatively similar techniques were used in measuring and observing the physical characteristics of the subjects examined. In the statistical reduction of the data, the author utilized the usual methods of calculating the statistical constants found in the body of this paper. The means were computed by the "assumed mean" method, and the probable errors with the assistance of Pearson's tables of X_1 and X_2 . Wherever the term " x p.e." is given, it signifies the difference between the means expressed in terms of the probable error of the difference. In the attempt to establish possible geographical variations in physical features between the inhabitants of the different districts of Syria, the Syrian series has been resolved into four provincial groups. These groups, based on the place of birth of the subjects, are designated as Lebanon, Alawiya, Damascus, and Homs-Hama-Aleppo. Their selection was purely an arbitrary one, but its successful outcome is well demonstrated by the important differences that become apparent early in this study.

On behalf of Mr. Cline I wish to thank the Bureau of International Research of Harvard University and Radcliffe College, whose liberal grant made this work possible; and the American University at Beirut, whose facilities and assistance in the collection of the Syrian data were of great value. I personally wish to thank both Dr. Coon and Mr. Cline for their helpful cooperation. And especially I wish to express my gratitude to Dr. E. A. Hooton for his kind and generous direction in the preparation of the manuscript.

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PEABODY MUSEUM,
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December, 1933.

THE RACIAL CHARACTERISTICS OF SYRIANS AND ARMENIANS

AGE

THE Syrians measured for this study were comparatively young, the mean age for the total series being 26.20. Although all the individuals were between 18 and 64 years of age, more than two-thirds of their number were under 30. This is to be expected, since the majority of the subjects were college students at the American University of Beirut.

The Syrians of Alawiya are the oldest, while those from Damascus are the youngest, having a small range of 18-29, and a mean of 21.20. The Homs-Hama-Aleppo and Lebanon subgroups are intermediate in position.

Whether or not the very low mean age of the Damascus Syrians is indicative of the fact that these people have a smaller life span than their countrymen from other districts, is very difficult to say. I am inclined to believe that the age of the Damascus group is due to the particular selective process involved in the collection of the data. Nevertheless, it is a fact that in this study the Damascus group varies significantly from the others in mean age, since the differences observed are more than 3, 5, and 9 times their probable errors.

TABLE 1. AGE

	No.	Range	Mean	S. D.	C. V.
Total Syrians	263	18-64	26.20 \pm 0.36	8.75 \pm 0.26	33.40 \pm 0.98
Lebanon . . .	164	18-54	24.60 \pm 0.88	7.40 \pm 0.28	30.08 \pm 1.12
Alawiya . . .	53	18-64	31.55 \pm 0.97	10.50 \pm 0.69	33.28 \pm 2.18
Damascus .	19	18-29	21.20 \pm 0.45	2.90 \pm 0.32	13.68 \pm 1.50
H-H-Aleppo	17	18-44	27.90 \pm 1.23	7.50 \pm 0.87	26.88 \pm 3.11

DIFFERENCES AND AMOUNT IN EXCESS OF PROBABLE ERRORS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.*	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	... . .	+1.60 3.14	-5.35 5.19	+5.00 7.04	-1.70 1.33
Lebanon	-1.60 3.14	... . .	-6.95 7.02	+3.40 5.86	-3.30 2.56
Alawiya	+5.35 5.19	+0.95 7.02	... . .	+10.35 9.67	+3.65 2.32
Damascus	-5.00 7.04	-3.40 5.86	-10.35 9.67	... . .	-6.70 3.92
H-H-Aleppo	+1.70 1.33	+3.30 2.56	-3.65 2.32	+6.70 3.92	... . .

* x p.e. refers to the number of times the probable error is contained in the difference.

METRICAL ANALYSIS OF THE MATERIAL

MEASUREMENTS AND INDICES OF THE BODY

Stature. The Syrians are neither tall nor short, but of moderate stature with a mean of 167.19 centimeters. There are no large geographical variations in stature with the single exception of the Homs-Hama-Aleppo subgroup. The Syrians of this district are about 2 centimeters taller than the other groups; the differences they show, however, are not statistically significant. The Damascus group is the shortest, but this is probably connected with the fact that it is also the youngest.

The Armenians of Boston, with a mean of 166.16 centimeters, are a little shorter than the Syrians, and also not as tall as those Armenians measured by Boas, Twarjanowitsch, Hrdlička, and Chantre. Both the Syrians and Armenians of this investigation are approximately of the same stature as the Greeks and Bulgars of the Balkans, but shorter than the Mesopotamians and Samaritans of Asia Minor.

The Georgians, Lesghians, and other groups of the Caucasus are significantly shorter statured than the Syrians and Armenians.

Biacromial Diameter. Biacromial diameter is a measurement of extraordinarily small variability. The mean biacromial diameter for Syrians is 37.52 centimeters, which indicates shoulders of moderate breadth. In general, they may be said to be a little narrower than those of most Europeans.

There are no significant regional differences to be found for this measurement on examination of the various groups.

The Armenians with a mean of 38.11 are a little broader-shouldered than the Syrians, and approximate the Northern Albanians and Armenians measured by Twarjanowitsch in this dimension.

Relative Shoulder Breadth. The mean relative shoulder breadth for all Syrians is 22.40. There are no significant differences apparent between the subgroups. The Armenians, with a mean of 22.93, have slightly broader shoulders in relation to their statures than have the Syrians.

Sitting Height. If we examine table 5 we find that on the whole, the Syrians have moderate to fairly long trunks. The Syrians of Alawiya have the lowest mean sitting height of all the groups, but

this is consistent with the fact that these peoples have also one of the shortest mean statures in Syria. In this respect the inhabitants of Alawiya show possibly significant differences from the Syrians of Lebanon, Damascus, and Aleppo.

TABLE 2. STATURE

	No.	Range	Mean	S. D.	C. V.
Total Syrians	251	149-187	167.19 \pm 0.28	6.66 \pm 0.20	3.98 \pm 0.12
Lebanon	162	149-187	167.28 \pm 0.35	6.66 \pm 0.25	3.98 \pm 0.15
Alawiya	44	149-187	166.76 \pm 0.72	7.08 \pm 0.51	4.25 \pm 0.31
Damascus	19	149-178	166.59 \pm 1.02	6.60 \pm 0.72	3.96 \pm 0.43
H-H-Aleppo	17	155-184	169.41 \pm 1.01	6.18 \pm 0.71	3.65 \pm 0.42
Armenians	101	154-186	166.16 \pm 0.88	5.60 \pm 0.27	3.37 \pm 0.16

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	-0.09 0.20	+0.43 0.56	+0.60 0.57	-2.22 2.11
Lebanon	+0.09 0.20	...	+0.52 0.65	+0.69 0.64	-2.13 1.99
Alawiya	-0.43 0.56	-0.52 0.65	...	+0.17 0.14	-2.65 2.14
Damascus	-0.60 0.57	-0.69 0.64	-0.17 0.14	...	-2.82 1.96
H-H-Aleppo	+2.22 2.11	+2.13 1.99	+2.65 2.14	+2.82 1.96	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Greeks	Pittard	124	166.40 \pm 0.33
Bulgars	Pittard	200	166.74
Bulgars	Hasluck and Morant	100	167.92 \pm 0.38
Northern Albanians*	Coon	1065	169.71 \pm 0.14
<i>Asia Minor</i>			
Mesopotamian Jews	Weissenberg	37	164.1
Arabs	Mochi	29	164.28
Armenians	Weissenberg	20	164.6
Greeks of Asia Minor	Neophytos	42	165.5
Armenians	Boas	75	167.04 \pm 0.48
Armenians	Twarjanowitsch	105	167.10
Armenians	Hrdlička	25	167.4
Tachtadschy and Bektasch	von Luschans	50	167.70 \pm 0.33
Turks	Pittard	300	167.9
Turks	Hasluck and Morant	200	167.92 \pm 0.29
Armenians	Chantre	239	169.44
Mesopotamians (Kish)	Buxton and Rice	159	169.56 \pm 0.33
Kurds	Pittard	48	170.7
Samaritans	Szpidbaum	27	171.07 \pm 0.85
Mesopotamian Arabs*	Ehrlich	32	171.28 \pm 0.81
Samaritans	Huxley	35	173.0
<i>Caucasus</i>			
Georgian Jews	Weissenberg	33	163.6
Lesghians	Chantre	11	164.
Caucasus Jews	Weissenberg	20	164.0
Georgians	Dzhavahov	900	165.5
Aissores	Chantre	22	166.

* Unpublished manuscripts in the Peabody Museum.

THE RACIAL CHARACTERISTICS

TABLE 3. BIACROMIAL DIAMETER

	No.	Range	Mean	S. D.	C. V.
Total Syrians	250	22-45	37.52±0.10	2.43±0.07	6.48±0.20
Lebanon	162	22-45	37.43±0.14	2.58±0.10	6.89±0.26
Alawiya	44	34-42	37.73±0.21	2.10±0.15	5.57±0.40
Damascus	19	31-42	37.37±0.36	2.31±0.25	6.18±0.68
H-H-Aleppo	17	34-42	37.82±0.27	1.62±0.19	4.28±0.50
Armenians	100	30-44	38.11±0.14	2.14±0.10	5.62±0.27

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	+0.09 0.53	-0.21 0.95	+0.15 0.41	-0.30 1.07
Lebanon	-0.09 0.53	...	-0.30 1.25	+0.06 0.15	-0.39 1.30
Alawiya	+0.21 0.95	+0.30 1.25	...	+0.36 0.88	-0.09 0.27
Damascus	-0.15 0.41	-0.06 0.15	-0.36 0.88	...	-0.45 1.00
H-H-Aleppo	+0.30 1.07	+0.39 1.30	+0.09 0.27	+0.45 1.00	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Northern Albanians	Coon	1067	38.59±0.05
<i>Asia Minor</i>			
Mesopotamian Arabs	Ehrich	32	37.78±0.24
Armenians	Twarjanowitsch	105	38.33

TABLE 4. RELATIVE SHOULDER BREADTH

	No.	Range	Mean	S. D.	C. V.
Total Syrians	250	18-25	22.40±0.05	1.26±0.04	5.63±0.17
Lebanon	162	18-25	22.42±0.07	1.28±0.05	5.71±0.21
Alawiya	44	20-25	22.36±0.14	1.38±0.10	6.17±0.44
Damascus	19	20-25	22.40±0.12	0.80±0.09	5.57±0.39
H-H-Aleppo	17	20-25	22.50±0.19	1.18±0.14	5.24±0.61
Armenians	100	18-26	22.93±0.09	1.30±0.06	5.67±0.27

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	-0.02 0.20	+0.04 0.29	0.00 0.00	-0.10 0.50
Lebanon	+0.02 0.20	...	+0.06 0.43	+0.02 0.20	-0.08 0.50
Alawiya	-0.04 0.29	-0.06 0.43	...	-0.04 0.24	-0.14 0.56
Damascus	0.00 0.00	-0.02 0.20	+0.04 0.24	...	-0.10 0.45
H-H-Aleppo	+0.10 0.50	+0.08 0.50	+0.14 0.56	+0.10 0.45	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Northern Albanians	Coon	1065	22.76±0.02
<i>Asia Minor</i>			
Mesopotamian Arabs	Ehrich	32	22.13±0.13
Armenians	Twarjanowitsch	105	22.34

The Armenians, with a sitting height of 88.58, in general approximate the Syrians with the exception of the Alawiin. The peoples of the Balkans and Asia Minor, as shown by the comparative table, approach the Syrians and Armenians in this feature, but the Caucasians, as exemplified by the Georgian Jews, have much lower sitting heights.

TABLE 5. SITTING HEIGHT

	No.	Range	Mean	S. D.	C. V.
Total Syrians	233	78-101	88.09 \pm 0.16	3.51 \pm 0.11	3.98 \pm 0.12
Lebanon	154	78-98	88.24 \pm 0.20	3.63 \pm 0.14	4.11 \pm 0.15
Alawiya	35	78-95	87.31 \pm 0.38	3.36 \pm 0.27	3.85 \pm 0.31
Damascus	19	81-95	88.48 \pm 0.45	2.94 \pm 0.32	3.32 \pm 0.36
H-H-Aleppo	17	84-101	88.87 \pm 0.60	3.69 \pm 0.43	4.15 \pm 0.48
Armenians	98	80-97	88.58 \pm 0.23	3.43 \pm 0.17	3.87 \pm 0.19

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians		Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff.	x p.e.	diff.	x p.e.	diff.	x p.e.
Total Syrians	...	...	-0.15	0.06	+0.78	1.90
Lebanon	+0.15	0.06	...	...	+0.93	2.21
Alawiya	-0.78	1.90	-0.93	2.21	...	...
Damascus	+0.39	0.81	+0.24	0.49	+1.17	2.02
H-H-Aleppo	+0.78	1.26	+0.63	1.00	+1.56	2.20
					+0.39	0.52
				

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Greeks	Pittard	124	87.57
Bulgars	Pittard	200	89.18
Northern Albanians	Coon	1065	89.44 \pm 0.08
<i>Asia Minor</i>			
Turks	Pittard	200	88.29
Turks	Hasluck and Morant	200	88.29
Kurds	Pittard	48	88.40
Mesopotamian Arabs	Ehrich	32	90.22 \pm 0.46
<i>Caucasus</i>			
Georgian Jews	Weissenberg	19	86.9

Relative Sitting Height. Male adult Syrians have sitting heights that are on the average 52.42 per cent of their statures. This relationship is very constant over the greater part of Syria except in the Damascus district, where the mean rises to 53.34. This signifies that the residents of Damascus have longer trunks relative to their total body length, or, inasmuch as their absolute sitting heights approximate the average, that they are shorter-legged than the other Syrians.

The Armenians measured in Boston have a mean relative sitting height that is somewhat in excess of that of the total Syrians. The Greeks, Bulgars, and Albanians of the Balkans, however, as well as the Turks, Kurds, and Mesopotamian Arabs of Asia Minor, all have means that are extraordinarily similar to the Syrians as a whole.

TABLE 6. RELATIVE SITTING HEIGHT

	No.	Range	Mean	S. D.	C. V.
Total Syrians	233	44-57	52.42±0.08	1.74±0.05	3.32±0.10
Lebanon	154	48-57	52.64±0.08	1.50±0.06	2.85±0.10
Alawiya	35	44-55	52.16±0.25	2.22±0.18	4.26±0.34
Damascus	19	50-57	53.34±0.25	1.62±0.18	3.04±0.33
H-H-Aleppo	17	48-55	52.14±0.24	1.44±0.17	2.76±0.32
Armenians	98	51-59	53.89±0.09	1.35±0.07	2.53±0.12

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	-0.22 1.57	+0.26 1.00	-0.92 3.54	+0.28 1.08
Lebanon	+0.22 1.57	...	+0.48 1.85	-0.70 2.69	+0.50 1.92
Alawiya	-0.26 1.00	-0.48 1.85	...	-1.18 3.37	+0.02 0.57
Damascus	+0.92 3.54	+0.70 2.69	+1.18 3.37	...	+1.20 3.43
H-H-Aleppo	-0.28 1.08	-0.50 1.92	-0.02 0.57	-1.20 3.43	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Greeks	Pittard	124	52.45
Northern Albanians	Coon	1063	52.76±0.03
Bulgars	Pittard	200	52.85
<i>Asia Minor</i>			
Kurds	Pittard	48	51.78*
Turks	Pittard	200	52.36
Turks	Hasluck and Morant	200	52.36
Mesopotamian Arabs	Ehrich	32	52.47±0.26
<i>Caucasus</i>			
Georgian Jews	Weissenberg	19	53.0

* Index of means.

Chest Breadth. In studying the results of this measurement, one is surprised by the small variability exhibited by a diameter so difficult to obtain accurately.

The Syrians of Lebanon, Alawiya, and Damascus all have approximately the same mean diameters for chest breadth. Only the inhabitants of Homs-Hama-Aleppo differ from any of the others in having broader chests. The differences shown by this group are, nevertheless, only possibly significant and may be the result of the random sampling process.

TABLE 7. CHEST BREADTH

	No.	Range	Mean	S. D.	C. V.
Total Syrians	250	23-37	27.84 ± 0.08	1.98 ± 0.06	7.11 ± 0.21
Lebanon	161	23-37	27.87 ± 0.11	2.10 ± 0.08	7.53 ± 0.28
Alawiya	44	23-31	27.69 ± 0.16	1.56 ± 0.11	5.63 ± 0.40
Damascus	19	23-31	27.48 ± 0.27	1.74 ± 0.19	6.33 ± 0.69
H-H-Aleppo	17	23-31	28.41 ± 0.30	1.83 ± 0.21	6.44 ± 0.74

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	-0.03 0.21	+0.15 0.75	+0.36 1.29	-0.57 1.78
Lebanon	+0.03 0.21	...	+0.18 0.90	+0.39 1.39	-0.54 1.69
Alawiya	-0.15 0.75	-0.18 0.90	...	+0.21 0.66	-0.72 2.06
Damascus	-0.36 1.29	-0.39 1.39	-0.21 0.66	...	-0.93 2.33
H-H-Aleppo	+0.57 1.78	+0.54 1.69	+0.72 2.06	+0.93 2.33	...

COMPARATIVE DATA

			No.	Mean
<i>Balkans</i>				
Northern Albanian	.....	Coon	1067	28.56 ± 0.04
<i>Asia Minor</i>				
Armenians	.....	Hrdlička	25	26.75
Mesopotamian Arabs	.....	Ehrlich	32	28.28 ± 0.24

TABLE 8. CHEST DEPTH

	No.	Range	Mean	S. D.	C. V.
Total Syrians	250	16-31	21.88 ± 0.08	1.98 ± 0.06	9.05 ± 0.27
Lebanon	161	16-29	21.82 ± 0.10	1.90 ± 0.07	8.71 ± 0.33
Alawiya	44	18-27	22.04 ± 0.17	1.70 ± 0.12	7.71 ± 0.55
Damascus	19	20-25	20.89 ± 0.18	1.14 ± 0.12	5.46 ± 0.60
H-H-Aleppo	17	16-31	22.14 ± 0.45	2.78 ± 0.32	12.56 ± 1.45

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	+0.06 0.43	-0.16 0.80	+0.99 4.95	-0.26 0.57
Lebanon	-0.06 0.43	...	-0.22 1.10	+0.93 4.65	-0.32 0.78
Alawiya	+0.16 0.80	+0.22 1.10	...	+1.15 4.79	-0.10 0.21
Damascus	-0.99 4.95	-0.93 4.65	-1.15 4.79	...	-1.25 2.60
H-H-Aleppo	+0.26 0.57	+0.32 0.78	+0.10 0.21	+1.25 2.60	...

COMPARATIVE DATA

			No.	Mean
<i>Balkans</i>				
Northern Albanians	.....	Coon	1066	24.26 ± 0.04
<i>Asia Minor</i>				
Armenians	.....	Hrdlička	25	21.25
Mesopotamian Arabs	.....	Ehrlich	32	22.69 ± 0.23

The Armenians measured by Hrdlička are considerably narrower-chested than the Syrians, while the Northern Albanians and Mesopotamian Arabs, although having broader chests than the Syrians as a whole, are not any greater in this respect than the people of the Homs-Hama-Aleppo mountains.

Chest Depth. The mean antero-posterior diameter of the chest measures 21.88 centimeters for total Syrians. Chest depth is fairly uniform over all Syria except in the Damascus district, the inhabitants of this area showing much shallower chests than any of the other provinces of the country. These differences exhibited by the residents of the Damascus area are real and attain statistical significance, with x p.e.'s of 4.95, 4.65, 4.79, and 2.60.

The Syrians approach the Mesopotamian Arabs and the Armenians studied by Hrdlička very closely in this diameter, but have chests that are much shallower than those of the Northern Albanians.

MEASUREMENTS AND INDICES OF THE HEAD AND FACE

Head Length. The Syrians, with a mean of 183.06 millimeters for maximum head length, must be considered as belonging to the shorter-headed groups of mankind. However, Syria as a whole is not at all uniform in this respect, for, although the Lebanese and Alawiin are short-headed, the Syrians of Damascus and Homs-Hama-Aleppo have head lengths of moderate dimensions, the former presenting a mean of 188.37 compared to 186.18 for the Aleppo group.

The Armenians display a mean of 184.30 millimeters, which is also indicative of a short head, but not quite as short as that of the total Syrians.

If we turn to the comparative material from the Balkans, we find that the Bulgars of Hasluck and Morant are the only ones who approach the Syrians and Armenians in this diameter. In Asia Minor, our Syrians and Armenians occupy an intermediate position, the Arabs, Greeks, Turks, and Armenians having shorter mean head lengths, while the Samaritans and Mesopotamian Arabs are longer-headed.

Except for the Aissores and Lesghians, who have very short heads, the material from the Caucasus shows head lengths quite comparable to those of the Syrians and Armenians.

TABLE 9. HEAD LENGTH

	No.	Range	Mean	S. D.	C. V.
Total Syrians	263	167-202	183.06 \pm 0.32	7.65 \pm 0.22	4.18 \pm 0.14
Lebanon	163	167-202	183.03 \pm 0.40	7.53 \pm 0.28	4.11 \pm 0.15
Alawiya	53	170-199	183.75 \pm 0.66	7.17 \pm 0.47	3.90 \pm 0.26
Damascus	19	176-199	188.37 \pm 0.96	6.21 \pm 0.68	3.30 \pm 0.36
H-H-Aleppo	17	170-199	186.18 \pm 1.22	7.47 \pm 0.86	4.01 \pm 0.46
Armenians	101	169-203	184.30 \pm 0.43	6.47 \pm 0.31	3.51 \pm 0.17

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	+0.03 0.06	-0.69 0.95	-5.31 5.26	-3.12 2.48
Lebanon	-0.03 0.06	...	-0.72 0.94	-5.34 5.13	-3.15 2.44
Alawiya	+0.69 0.95	+0.72 0.94	...	-4.62 3.95	-2.43 1.75
Damascus	+5.31 5.26	+5.34 5.13	+4.62 3.95	...	+2.19 1.41
H-H-Aleppo	+3.12 2.48	+3.15 2.44	+2.43 1.75	-2.19 1.41	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Bulgars	Hasluck and Morant	100	183.24 \pm 0.46
Northern Albanians	Coon	1067	186.18 \pm 0.15
Greeks	Pittard	145	187.2
Bulgars	Pittard	200	188.3
<i>Asia Minor</i>			
Tachtdaschy and Bektasch	von Luschan	50	176.40 \pm 0.54
Arabs	Mochi	29	180.00
Greeks of Asia Minor	Neophytos	142	180.7
Turks	Hasluck and Morant	200	180.93 \pm 0.31
Armenians	Hrdlička	25	181.
Armenians	Twarjanowitsch	105	181.78
Armenians	Weissenberg	20	182.
Armenians	Chantre	292	182.08
Kurds	Pittard	63	182.68
Mesopotamian Jews	Weissenberg	37	184.
Turks	Pittard	200	185.4
Armenians	Boas	75	186.39 \pm 0.48
Samaritans	Huxley	35	188.
Mesopotamians (Kish)	Buxton and Rice	164	189.94 \pm 0.33
Mesopotamian Arabs	Ehrich	33	190.44 \pm 0.70
Samaritans	Szpidaum	27	191.07 \pm 0.87
<i>Caucasus</i>			
Aissores	Chantre	22	173.
Lesghians	Chantre	11	180.
Caucasus Armenians	von Erckert	19	182.31 \pm 1.32
Caucasus Jews	Weissenberg	20	183.
Georgian Jews	Weissenberg	33	184.
Georgians	Dzhavahov	900	185.

Head Breadth. The Syrians are not only short-headed but have heads that are absolutely and relatively broad. The mean for the total Syrians is 155.47 millimeters.

The regional differences for this characteristic assume a very

definite pattern, the diameter increasing from north to south and from east to west. Thus, the Alawiin and Homs-Hama-Aleppo Syrians are narrower-headed than the Lebanonites and the Damascus Syrians respectively, and, in turn, the interior groups of Damascus and Homs-Hama-Aleppo are very much narrower-headed than those of coastal Lebanon and Alawiya.

The Armenians with a mean of 157.90 surpass the Syrians by 2.43 millimeters. They are, therefore, almost identical in head breadth with the Armenians of Twarjanowitsch and slightly narrower-headed than those of Boas.

Coon's Northern Albanians are the single group in the Balkans which approximates our Armenian series in mean breadth. In Asia Minor the narrower-headed elements are mainly confined to the east and south, the Mesopotamians, Arabs, Samaritans, and the like having relatively narrow heads.

The Georgian Jews and Lesghians of the Caucasus are similar to our Armenians, while the Aissores and Caucasian Jews rival the Syrians in maximum biparietal breadth.

Cephalic Index. Although the mean cepahlic index for total Syria is 85.11, an hyperbrachycephalic index, it is not indicative of the true situation as expressed by the division of the Syrians into geographical subgroups. A glance at table 11 makes it perfectly clear that there are two distinct cephalic index areas, a hyperbrachycephalic area along the coastal regions in Lebanon and Alawiya, and a very low brachycephalic (really mesocephalic) area in the eastern highlands of Damascus and Homs-Hama-Aleppo.

The Armenians measured in Boston are almost identical with the Syrians of Lebanon and Alawiya in mean cephalic index, and agree with the means for Armenians obtained by Boas, Hrdlička, and Chantre.

The highest indices in Asia Minor are those of the Kurds, Turks, Greeks, and Tachtadschy and Bektasch of von Luschan. In the Caucasus, the Lesghians and Aissores are hyperbrachycephalic, while the Caucasus Armenians and Georgian Jews are almost identical with the Armenians of this study.

From our point of view, the evidence of the comparative data is of striking importance, for in it one may perceive that the area of hyperbrachycephaly does not lie in Asia Minor but in the Caucasus region.

TABLE 10. HEAD BREADTH

	No.	Range	Mean	S. D.	C. V.
Total Syrians	265	135-170	155.47 \pm 0.22	5.31 \pm 0.16	3.42 \pm 0.10
Lebanon	165	135-170	156.43 \pm 0.28	5.31 \pm 0.20	3.39 \pm 0.13
Alawiya	53	144-167	154.78 \pm 0.49	5.25 \pm 0.34	3.39 \pm 0.22
Damascus	19	144-161	153.67 \pm 0.65	4.17 \pm 0.46	2.71 \pm 0.30
H-H-Aleppo	17	144-164	151.72 \pm 0.74	4.53 \pm 0.52	2.99 \pm 0.35
Armenians	101	143-173	157.90 \pm 0.32	4.82 \pm 0.23	3.05 \pm 0.14

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	-0.96 2.67	+0.69 1.28	+1.80 2.61	+3.75 4.87
Lebanon	+0.96 2.67	...	+1.65 2.95	+2.76 3.89	+4.71 5.96
Alawiya	-0.69 1.28	-1.65 2.95	...	+1.11 1.37	+3.06 3.44
Damascus	-1.80 2.61	-2.76 3.89	-1.11 1.37	...	+1.95 1.99
H-H-Aleppo	-3.75 4.87	-4.71 5.96	-3.06 3.44	-1.95 1.99	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Bulgars	Pittard	200	150.1
Bulgars	Hasluck and Morant	100	152.10 \pm 0.36
Greeks	Pittard	145	153.9
Northern Albanians	Coon	1067	157.78 \pm 0.12
<i>Asia Minor</i>			
Mesopotamians (Kish)	Buxton and Rice	164	143.48 \pm 0.26
Mesopotamian Jews	Weissenberg	37	144.
Mesopotamian Arabs	Ehrich	33	140.21 \pm 0.48
Samaritans	Huxley	35	147.
Arabs	Mochi	29	148.38
Samaritans	Szpidbaum	27	148.40 \pm 0.64
Turks	Pittard	200	152.35
Tachtadschy and Bektaisch	von Luschans	50	152.60 \pm 0.40
Turks	Hasluck and Morant	200	152.65 \pm 0.27
Armenians	Weissenberg	20	153.
Armenians	Hrdlička	25	155.
Armenians	Chantre	292	156.13
Armenians	Twarzanowitsch	105	157.82
Greeks of Asia Minor	Neophytos	142	157.6
Kurds	Pittard	63	157.85
Armenians	Boas	75	159.43 \pm 0.42
<i>Caucasus</i>			
Georgians	Dzhavahov	900	154.
Aissares	Chantre	22	155.
Caucasus Jews	Weissenberg	20	155.
Caucasus Armenians	von Erckert	19	156.42 \pm 1.00
Georgian Jews	Weissenberg	33	158.
Lesghians	Chantre	11	158.

Head Height. Head height was obtained with the aid of the anthropometer, by measuring directly the distance between tragion and a point on top of the head in the line of a vertical axis running through tragion.

TABLE 11. CEPHALIC INDEX

	No.	Range	Mean	S. D.	C. V.
Total Syrians	265	74-97	85.11 ± 0.18	4.35 ± 0.13	5.11 ± 0.15
Lebanon	165	74-97	85.77 ± 0.19	3.69 ± 0.14	4.30 ± 0.16
Alawiya	53	74-97	85.80 ± 0.44	4.77 ± 0.31	5.56 ± 0.36
Damascus	19	77-91	81.78 ± 0.47	3.06 ± 0.33	3.74 ± 0.41
H-H-Aleppo	17	74-88	81.54 ± 0.56	3.45 ± 0.40	4.23 ± 0.49
Armenians	101	74-94	85.81 ± 0.24	3.65 ± 0.17	4.25 ± 0.20

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	-0.66 2.54	-0.09 1.47	+3.33 6.61	+3.57 6.16
Lebanon	+0.66 2.54	...	-0.03 0.06	+3.99 7.82	+4.23 7.17
Alawiya	+0.69 1.47	+0.03 0.06	...	+4.02 6.28	+4.26 6.00
Damascus	-3.33 6.61	-3.99 7.82	-4.02 6.28	...	+0.24 0.33
H-H-Aleppo	-3.57 6.16	-4.23 7.17	-4.26 6.00	-0.24 0.33	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Bulgars	Pittard	200	79.88
Greeks	Pittard	145	81.92 ± 0.26
Bulgars	Hasluck and Morant	100	83.26 ± 0.27
Northern Albanians	Coon	1067	84.84 ± 0.09
<i>Asia Minor</i>			
Mesopotamians (Kish)	Buxton and Rice	164	76.61 ± 0.18
Mesopotamian Arabs	Ehrich	33	76.85 ± 0.38
Samaritans	Szpidbaum	27	77.64 ± 0.43
Samaritans	Huxley	35	78.1
Mesopotamian Jews	Weissenberg	37	78.1
Arabs	Mochi	29	81.59
Turks	Pittard	200	82.24
Armenians	Weissenberg	20	84.1
Armenians	Boss	75	85.11 ± 0.28
Armenians	Hrdlička	25	85.35
Armenians	Chantre	292	85.77
Kurds	Pittard	63	86.49
Tachtadschy and Bektasch	von Luschan	50	86.56 ± 0.18
Armenians	Twarjanowitsch	105	86.89
Turks	Hasluck and Morant	200	87.20 ± 0.17
Greeks of Asia Minor	Neophytos	142	87.21
<i>Caucasus</i>			
Georgians	Dzhavahov	900	83.2
Caucasus Jews	Weissenberg	20	84.7
Georgian Jews	Weissenberg	33	85.9
Caucasus Armenians	von Erckert	19	86.21 ± 0.36
Lesghians	Chantre	11	87.77
Aissores	Chantre	22	89.50

There are no significant differences between the mean head heights of Syrians and Armenians, both having diameters that are slightly greater than 127 millimeters. The Syrians of Damascus and Homs-Hama-Aleppo have the largest head heights, with sta-

tistically significant differences from the Lebanon and Alawiya subgroups. The inhabitants of Alawiya have by far the smallest head height mean, the higher diameter of the Lebanese probably indicating a greater amount of infusion of the more dolichocephalic elements from the interior highland provinces. The most brachycephalic types of Syria, then, have the lowest head heights, while the longer-headed elements have higher heads.

The Armenians, Greeks, and Tachtadschy of Asia Minor have head height means that are many millimeters greater than those of our Syrians and Armenians. But differences in technique and the lack of a standard method of measuring this diameter alone are sufficient to account for the appearance of these large divergencies.

TABLE 12. HEAD HEIGHT

No.	Range	Mean	S. D.	C. V.	
Total Syrians	252	98-148	127.77 \pm 0.30	7.14 \pm 0.21	5.59 \pm 0.17
Lebanon	161	98-145	127.98 \pm 0.40	7.53 \pm 0.28	5.88 \pm 0.22
Alawiya	44	110-142	126.06 \pm 0.62	6.06 \pm 0.44	4.81 \pm 0.35
Damascus	19	125-139	129.11 \pm 0.57	8.66 \pm 0.40	2.83 \pm 0.31
H-H-Aleppo	17	113-148	129.46 \pm 1.37	8.37 \pm 0.97	4.65 \pm 0.54
Armenians	101	112-153	127.24 \pm 0.49	7.37 \pm 0.35	5.79 \pm 0.27

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo			
	diff.	x p.e.	diff.	x p.e.	diff.	x p.e.	diff.	x p.e.
Total Syrians	...	...	-0.21 0.42	+1.71 2.48	-1.34 2.09	-1.69 1.21		
Lebanon	+0.21	0.42	...	+1.92 2.63	-1.13 1.64	-1.48 1.03		
Alawiya	-1.71	2.48	-1.92 2.63	...	-3.05 3.63	-3.40 2.27		
Damascus	+1.34	2.09	+1.13 1.64	+3.05 3.63	...	...	-0.35 0.24	
H-H-Aleppo	+1.69	1.21	+1.48 1.03	+3.40 2.27	+0.35 0.24	...	...	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Greeks	Pittard	145	123.47
Bulgars	Hasluck and Morant	100	123.48
Bulgars	Pittard	200	123.48
Northern Albanians	Coon	1067	128.34 \pm 0.12
<i>Asia Minor</i>			
Turks	Pittard	200	125.5
Samaritans	Szpidbaum	27	127.03 \pm 0.67
Kurds	Pittard	63	128.6
Armenians	Twarjanowitsch	105	131.85
Greeks of Asia Minor	Neophytos	142	132.85
Armenians	Hrdlička	25	137.
Tachtadschy and Bektasch	von Luschan	50	137.34 \pm 0.61
<i>Caucasus</i>			
Caucasus Armenians	von Erckert	19	129.58 \pm 1.22

Length-Height Index. Both the Syrians and Armenians are in the hypsicephalic class. Syria is geographically quite uniform in this characteristic. There are no statistically significant differences between any of the subgroups.

In the Balkans, the Northern Albanians have a mean length-height index comparable to that of the Syrians and Armenians.

The Greeks, Tachtadschy, and Armenians of Asia Minor have a much higher ratio of head height to head length, while the Kurds with a mean of 69.48 show no significant divergence.

The Armenians of the Caucasus have higher and shorter heads than the Syrians and Armenians of this study.

TABLE 18. LENGTH-HEIGHT INDEX

	No.	Range	Mean	S. D.	C. V.
Total Syrians	251	55-81	69.92±0.19	4.35±0.13	6.22±0.19
Lebanon	160	55-81	70.23±0.22	4.14±0.16	5.89±0.22
Alawiya	44	61-81	68.77±0.51	4.98±0.36	7.24±0.52
Damascus	19	64-75	69.41±0.48	3.12±0.34	4.50±0.49
H-H-Aleppo	17	58-81	70.01±0.92	5.64±0.65	8.06±0.93
Armenians	101	60-82	69.04±0.27	4.01±0.19	5.81±0.28

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	... ...	-0.31 1.03	+1.15 2.09	+0.51 0.98	-0.09 0.10
Lebanon	+0.31 1.03	... ...	+1.46 2.61	+0.82 1.55	+0.22 0.23
Alawiya	-1.15 2.09	-1.46 2.61	... ...	-0.04 0.91	-1.24 1.18
Damascus	-0.51 0.98	-0.82 1.55	+0.64 0.91	... ...	-0.60 0.58
H-H-Aleppo	+0.09 0.10	-0.22 0.23	+1.24 1.18	+0.60 0.58	... ...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Greeks	Pittard	145	65.96
Bulgars	Pittard	200	65.99
Bulgars	Hasluck and Morant	100	67.33 *
Northern Albanians	Coon	1067	69.02±0.07
<i>Asia Minor</i>			
Samaritans	Szpidbaum	27	66.40±0.33
Turks	Pittard	200	67.65
Kurds	Pittard	63	69.48
Armenians	Twarjanowitsch	105	72.53
Greeks of Asia Minor	Neophytos	142	73.05
Tachtadschy and Bektasch	von Luschan	50	78.02±0.31
Armenians	Hrdlička	25	81.7
<i>Caucasus</i>			
Caucasus Armenians	von Erckert	19	71.00±0.69

* Index of means.

Breadth-Height Index. The Syrians as a whole have breadth-height indices that are in the metriocephalic class. There are considerable regional disparities of this index in Syria. In the main, they resolve into a difference between coastal and interior districts, the residents of Lebanon and Alawiya having decidedly lower and broader heads than those from Damascus and Homs-Hama-Aleppo.

In comparison to the Syrians, the Armenians of Boston have lower breadth-height indices. The latter differ extraordinarily from the Armenians measured by Hrdlička, the latter being distinctly hypsicephalic, with a mean of 88.38. This index is due specifically

TABLE 14. BREADTH-HEIGHT INDEX

	No.	Range	Mean	S. D.	C. V.
Total Syrians	251	61-102	82.43 \pm 0.20	4.62 \pm 0.14	5.60 \pm 0.17
Lebanon . . .	159	70-93	82.22 \pm 0.23	4.32 \pm 0.16	5.25 \pm 0.20
Alawiya . . .	44	73-90	81.56 \pm 0.35	3.42 \pm 0.25	4.19 \pm 0.30
Damascus .	19	76-93	84.41 \pm 0.63	4.05 \pm 0.44	4.80 \pm 0.53
H-H-Aleppo	17	76-102	85.64 \pm 1.01	6.18 \pm 0.71	7.22 \pm 0.84
Armenians . . .	101	71-93	80.63 \pm 0.31	4.59 \pm 0.22	5.69 \pm 0.27

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	... . .	+0.21 0.70	+0.87 2.18	-1.98 3.00	-3.21 3.12
Lebanon	-0.21 0.70	... . .	+0.66 1.61	-2.19 3.13	-3.42 3.32
Alawiya	-0.87 2.18	-0.66 1.61	... . .	-2.85 3.96	-4.08 3.81
Damascus	+1.98 3.00	+2.19 3.13	+2.85 3.96	... . .	-1.23 1.03
H-H-Aleppo	+3.21 3.12	+3.42 3.32	+4.08 3.81	+1.23 1.03	... . .

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Greeks	Pittard	145	80.23
Bulgars	Hasluck and Morant	100	81.19 *
Northern Albanians	Coon	1067	81.47 \pm 0.09
Bulgars	Pittard	200	82.26
<i>Asia Minor</i>			
Kurds	Pittard	63	80.24
Turks	Pittard	200	82.36
Armenians	Twarjanowitsch	105	83.54
Greeks of Asia Minor	Neophytos	142	83.76
Samaritans	Szpidbaum	27	85.72 \pm 0.46
Armenians	Hrdlička	25	88.38 *
Tachtadschy and Bektašch	von Luschan	50	89.96 \pm 0.35
<i>Caucasus</i>			
Caucasus Armenians	von Erckert	19	82.47 \pm 0.69

* Index of means.

to their excessively greater head heights rather than to any difference in head breadth. Again it seems probable that variations in technique may be responsible, in large measure, for the differences.

Head Circumference. Maximum horizontal head circumference is considered to be an index of gross head size. Assuming this to be the case, then the members of the Damascus group may be said to have the largest heads and the Alawiin the smallest. The difference between the means of these two groups is 12.60 millimeters, this deviation being 5.02 times greater than the probable error of the difference. The Lebanon and Homs-Hama-Aleppo subgroups are in an intermediate position and show differences that are statistically significant only from the smaller Alawiya mean.

The Armenians of Boston were not measured for this character, but the evidence of the comparative table would indicate that the Syrians have larger heads than the Armenians of Weissenberg and Twarjanowitsch.

TABLE 15. HEAD CIRCUMFERENCE

	No.	Range	Mean	S. D.	C. V.
Total Syrians	263	502-597	552.62 ± 0.70	16.80 ± 0.49	3.05 ± 0.09
Lebanon ...	163	502-597	554.78 ± 0.90	17.04 ± 0.64	3.08 ± 0.12
Alawiya ...	53	514-585	544.82 ± 1.49	16.08 ± 1.05	2.95 ± 0.19
Damascus .	19	526-585	557.42 ± 2.02	18.08 ± 1.43	2.35 ± 0.26
H-H-Aleppo	17	526-597	553.34 ± 2.45	15.00 ± 1.74	2.71 ± 0.31

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	-2.16 1.89	+7.80 4.73	-4.80 2.24	-0.72 0.28
Lebanon	+2.16 1.89	...	+9.96 5.67	-2.64 1.15	+1.44 0.56
Alawiya	-7.80 4.73	-9.96 5.67	...	-12.60 5.02	-8.52 2.97
Damascus	+4.80 2.24	+2.64 1.15	+12.60 5.02	...	+4.08 1.28
H-H-Aleppo	+0.72 0.28	-1.44 0.56	+8.52 2.97	-4.08 1.28	...

COMPARATIVE DATA

Asia Minor		No.	Mean
Samaritans	Szpidbaum	27	547.2 ± 0.31
Armenians	Weissenberg	20	548.
Armenians	Twarjanowitsch	105	550.33

Bizygomatic Diameter. In face breadth, for the first time, we meet with a feature which definitely distinguishes the Armenians from the Syrians, the former being almost 4 millimeters greater in this diameter. In Syria itself, the inhabitants of Damascus have the

narrowest faces, while those of Alawiya in the northwest possess the broadest. Nevertheless, the 2.25 millimeters difference between them is but a possibly significant difference, and may be merely the result of the random sampling process.

TABLE 16. BIZYGOMATIC DIAMETER

	No.	Range	Mean	S. D.	C. V.
Total Syrians	264	125-154	138.85 \pm 0.22	5.35 \pm 0.16	3.85 \pm 0.11
Lebanon	165	125-154	138.75 \pm 0.28	5.35 \pm 0.20	3.86 \pm 0.14
Alawiya	53	125-154	139.55 \pm 0.52	5.65 \pm 0.37	4.05 \pm 0.27
Damascus	18	130-149	137.30 \pm 0.77	4.85 \pm 0.55	3.53 \pm 0.40
H-H-Aleppo	17	130-149	138.75 \pm 0.69	4.20 \pm 0.49	3.03 \pm 0.35
Armenians	101	120-163	142.84 \pm 0.41	6.09 \pm 0.29	4.26 \pm 0.20

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. \times p.e.				
Total Syrians	...	+0.10 0.28	-0.70 1.23	+1.55 1.94	+0.10 1.37
Lebanon	-0.10 0.28	...	-0.80 1.36	+1.45 1.77	0.00 0.00
Alawiya	+0.70 1.23	+0.80 1.36	...	+2.25 2.42	+0.80 0.92
Damascus	-1.55 1.94	-1.45 1.77	-2.25 2.42	...	-1.45 1.41
H-H-Aleppo	-0.10 1.37	0.00 0.00	-0.80 0.92	+1.45 1.41	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Bulgars	Hasluck and Morant	100	137.08 \pm 0.33
Greeks	Pittard	145	139.9
Bulgars	Pittard	200	140.59
Northern Albanians	Coon	1067	142.85 \pm 0.12
<i>Asia Minor</i>			
Samaritans	Huxley	35	132.
Mesopotamians (Kish)	Buxton and Rice	164	133.32 \pm 0.26
Samaritans	Szpidabaum	27	133.85 \pm 0.79
Mesopotamian Jews	Weissenberg	37	134.
Armenians	Weissenberg	20	136.
Mesopotamian Arabs	Ehrich	33	137.73 \pm 0.53
Armenians	Hrdlička	25	140.6
Kurds	Pittard	63	141.06
Tachtadschy and Bektasch	von Luschan	50	141.34 \pm 0.44
Turks	Pittard	200	141.4
Armenians	Chantre	292	141.60
Turks	Hasluck and Morant	200	142.28 \pm 0.25
Greeks of Asia Minor	Neophytos	142	143.
Armenians	Twarjanowitsch	105	143.45
Armenians	Boas	75	143.63 \pm 0.43
<i>Caucasus</i>			
Aissores	Chantre	22	137.
Caucasus Jews	Weissenberg	20	141.
Caucasus Armenians	von Erckert	19	141.58 \pm 1.13
Georgian Jews	Weissenberg	33	142.
Georgians	Dzhavahov	900	143.
Lesghians	Chantre	11	143.

Our Armenians agree very closely in this dimension with most of the other Armenian series listed in the comparative table, as well as with the groups from the Caucasus with the exception of the Aissores.

Cephalo-Facial Index. This ratio presents no striking differences between Syrians and Armenians, inasmuch as the greater facial dimensions of the Armenians are matched by their larger cranial breadths. Thus the Syrians with narrower faces and narrower heads have a cephalo-facial index of the same magnitude as that of the Armenians.

The regional differences center mainly about the higher index of the inhabitants of the Homs-Hama-Aleppo district, whose narrow heads distinguish them significantly from all the other provinces.

Total Face Height. The Syrians, with a mean total face height of 122.90 millimeters, are members of the moderate to long-faced groups of mankind. This does not represent the actual condition for the whole of Syria, inasmuch as the subgroups show considerable irregularity, the total mean being heavily overweighted by the 164 individuals of the Lebanon district.

The northern section of Syria is markedly longer-faced than the Lebanon and Damascus areas of the south. Homs-Hama-Aleppo has a mean face height of 126.40 and Alawiya 124.00, compared to 122.35 and 122.80 for Lebanon and Damascus respectively. It is possible that this long-faced condition is the result of influences from north of Syria, for the Armenians possess a still higher mean of 127.96 millimeters. If we turn to the comparative table for enlightenment on this point, we find that the evidence is in no manner consistent. The Armenians and other groups to the north vary from 120.2 to 130.24 millimeters, while the series to the south and east of Syria range from 114.53 to 128.67.

Facial Index. The men of Homs-Hama-Aleppo are relatively as well as absolutely the longest-faced group in all Syria. They are even more leptoprosopic than the Armenians who have a mean facial index of 89.74. The latter are, nevertheless, longer-faced than the Syrians as a whole.

In the Balkans, we find that the Bulgars and Coon's Northern Albanians are less leptoprosopic than our material. In Asia Minor, the Syrians stand in an intermediate position between the Mesopotamians at Kish and the hyperleptoprosopic Samaritans, Meso-

TABLE 17. CEPHALO-FACIAL INDEX

	No.	Range	Mean	S. D.	C. V.
Total Syrians	264	79-99	89.57 ± 0.13	3.18 ± 0.09	3.55 ± 0.10
Lebanon	165	82-99	89.15 ± 0.14	2.70 ± 0.10	3.03 ± 0.11
Alawiya	53	79-96	90.29 ± 0.34	3.69 ± 0.24	4.09 ± 0.27
Damascus	18	85-96	89.84 ± 0.38	2.40 ± 0.27	2.67 ± 0.30
H-H-Aleppo	17	88-96	91.82 ± 0.40	2.43 ± 0.28	2.65 ± 0.31
Armenians	101	78-99	90.33 ± 0.23	3.50 ± 0.17	3.87 ± 0.18

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	+0.42 2.10	-0.72 1.95	-0.27 0.68	-2.25 5.36
Lebanon	-0.42 2.10	...	-1.14 3.08	-0.69 1.73	-2.67 6.36
Alawiya	+0.72 1.95	+1.14 3.08	...	+0.45 0.88	-1.53 2.89
Damascus	+0.27 0.68	+0.69 1.73	-0.45 0.88	...	-1.98 3.60
H-H-Aleppo	+2.25 5.36	+2.07 6.36	+1.53 2.89	+1.98 3.60	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Bulgars	Hasluck and Morant	100	90.12
Northern Albanians	Coon	1067	90.26 ± 0.07
Greeks	Pittard	145	90.90
Bulgars	Pittard	200	93.33
<i>Asia Minor</i>			
Armenians	Weissenberg	20	88.89 *
Kurds	Pittard	63	89.95
Armenians	Boas	75	90.09
Samaritans	Szpidbaum	27	90.19 *
Turks	Hasluck and Morant	200	90.25
Armenians	Chantre	292	90.69 *
Armenians	Hrdlička	25	90.7
Greeks of Asia Minor	Neophytos	142	90.74
Armenians	Twarjanowitsch	105	90.89 *
Samaritans	Huxley	35	91.17 *
Tachtadschy and Bektasch	von Luschan	50	92.60 ± 0.25
Turks	Pittard	200	92.76
Mesopotamians (Kish)	Buxton and Rice	164	92.93 *
Mesopotamian Jews	Weissenberg	37	93.06
Arabs	Mochi	29	93.36 *
Mesopotamian Arabs	Ehrich	33	94.21 ± 0.38
<i>Caucasus</i>			
Aissores	Chantre	22	87.74 *
Georgian Jews	Weissenberg	33	89.87
Caucasus Armenians	von Erckert	19	90.47 ± 0.50
Caucasus Jews	Weissenberg	20	90.97
Georgians	Dzhavahov	900	92.86
Lesghians	Chantre	11	90.50 *

* Index of means.

potamian Arabs, and Jews. The Caucasian Jews are slightly shorter-faced than the Syrians and Armenians of our series.

TABLE 18. TOTAL FACE HEIGHT

	No.	Range	Mean	S. D.	C. V.
Total Syrians	264	100-144	122.90 \pm 0.25	6.10 \pm 0.18	4.96 \pm 0.15
Lebanon	164	100-144	122.35 \pm 0.33	6.25 \pm 0.23	5.11 \pm 0.19
Alawiya	53	110-134	124.00 \pm 0.55	5.95 \pm 0.39	4.80 \pm 0.31
Damascus	19	115-134	122.80 \pm 0.57	3.70 \pm 0.40	3.01 \pm 0.33
H-H-Aleppo	17	115-139	126.40 \pm 0.84	5.15 \pm 0.60	4.07 \pm 0.47
Armenians	100	114-147	127.96 \pm 0.46	6.85 \pm 0.33	5.35 \pm 0.26

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians diff. x p.e.	Lebanon diff. x p.e.	Alawiya diff. x p.e.	Damascus diff. x p.e.	H-H-Aleppo diff. x p.e.
Total Syrians	...	+0.55 1.34	-1.10 1.83	+0.10 0.16	-3.50 3.98
Lebanon	-0.55 1.34	...	-1.65 2.58	-0.45 0.68	-4.05 4.45
Alawiya	+1.10 1.83	+1.65 2.58	...	+1.20 1.52	-2.40 2.40
Damascus	-0.10 0.16	+0.45 0.68	-1.20 1.52	...	-3.60 3.56
H-H-Aleppo	+3.50 3.98	+4.05 4.45	+2.40 2.40	+3.60 3.56	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Bulgars	Hasluck and Morant	100	117.14 \pm 0.42
Northern Albanians	Coon	921	123.90 \pm 0.14
<i>Asia Minor</i>			
Mesopotamians (Kish)	Buxton and Rice	164	114.53 \pm 0.37
Samaritans	Szpidbaum	27	120.0 \pm 0.94
Armenians	Hrdlička	25	120.2
Tachtadschy and Bektašch	von Luschan	50	121.44 \pm 0.55
Armenians	Weissenberg	20	122.
Mesopotamian Jews	Weissenberg	37	124.
Turks	Hasluck and Morant	200	124.22 \pm 0.31
Samaritans	Huxley	35	125.
Mesopotamian Arabs	Ehrich	33	128.67 \pm 0.89
Armenians	Twarjanowitsch	105	130.24
<i>Caucasus</i>			
Caucasus Armenians	von Erckert	19	123.16 \pm 1.18
Caucasus Jews	Weissenberg	20	125.
Georgian Jews	Weissenberg	33	125.
Georgians	Dzhavahov	900	126.

Upper Face Height. The fact that this measurement follows the same tendencies observed in the case of total face height proves that the differences between the subgroups lie somewhere between nasion and prosthion, and not in the lower jaw.

Here again, the Homs-Hama-Aleppo subgroup is by far the longest, exceeding all the others as well as the total series by more than 5 millimeters. The Aleppo mean is also greater than that of the Armenians, the latter having, nevertheless, a longer mean face height than the Syrians as a whole.

TABLE 19. FACIAL INDEX

	No.	Range	Mean	S. D.	C. V.
Total Syrians	263	74-101	88.58 \pm 0.18	4.44 \pm 0.13	5.01 \pm 0.15
Lebanon	164	74-101	88.26 \pm 0.23	4.40 \pm 0.16	4.99 \pm 0.19
Alawiya	53	74-101	88.94 \pm 0.42	4.56 \pm 0.30	5.13 \pm 0.34
Damascus	18	82-93	89.26 \pm 0.44	2.76 \pm 0.31	3.00 \pm 0.35
H-H-Aleppo	17	86-101	91.74 \pm 0.53	3.24 \pm 0.37	3.53 \pm 0.41
Armenians	100	78-110	89.74 \pm 0.37	5.53 \pm 0.26	6.16 \pm 0.29

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	+0.32 1.14	-0.36 0.78	-0.68 1.45	-3.16 5.64
Lebanon	-0.32 1.14	...	-0.68 1.42	-1.00 2.04	-3.48 6.11
Alawiya	+0.36 0.78	+0.68 1.42	...	-0.32 0.52	-2.80 4.12
Damascus	+0.68 1.45	+1.00 2.04	+0.32 0.52	...	-2.48 3.59
H-H-Aleppo	+3.16 5.64	+3.48 6.11	+2.80 4.12	+2.48 3.59	...

COMPARATIVE DATA

			No.	Mean
<i>Balkans</i>				
Bulgars	Hasluck and Morant		100	85.47 \pm 0.29
Northern Albanians	Coon		921	87.06 \pm 0.11
<i>Asia Minor</i>				
Mesopotamians (Kish)	Buxton and Rice		164	85.14 \pm 0.29
Armenians	Hrdlička		25	85.5
Tachtadschy and Bektaš	von Luschans		50	85.88 \pm 0.58
Turks	Hasluck and Morant		200	87.40 \pm 0.23
Samaritans	Szpidbaum		27	89.7
Armenians	Weissenberg		20	89.7
Armenians	Twarjanowitsch		105	90.79
Mesopotamian Jews	Weissenberg		37	92.5
Mesopotamian Arabs	Ehrich		33	93.36 \pm 0.68
Samaritans	Huxley		35	94.4
<i>Caucasus</i>				
Caucasus Armenians	von Erckert		19	86.74 \pm 0.97
Caucasus Jews	Weissenberg		20	88.6
Georgian Jews	Weissenberg		33	88.0
Georgians	Dzhavahov		900	88.1

Upper Facial Index. The upper facial index follows the trend of the total facial index, the Homs-Hama-Aleppo subgroup having the most leptene faces, with the Damascus group following next in line.

The Armenians with a mean of 53.67 are intermediate between the hyperleptene Aleppo group and the moderately leptene total Syrians.

Minimum Frontal Diameter. The mean minimum diameter measured between the frontal crests is 106.82 millimeters for adult male Syrians. This is slightly smaller than the mean for the Armenians, but the difference is not statistically significant.

TABLE 20. UPPER FACE HEIGHT

	No.	Range	Mean	S. D.	C. V.
Total Syrians	265	55-89	72.80±0.20	4.85±0.14	6.69±0.20
Lebanon	165	60-89	72.50±0.25	4.70±0.17	6.48±0.24
Alawiya	53	55-84	72.55±0.50	5.40±0.35	7.44±0.49
Damascus	19	65-79	72.55±0.56	3.60±0.39	4.96±0.54
H-H-Aleppo	17	70-84	77.90±0.58	3.55±0.41	4.56±0.53
Armenians	100	65-91	76.61±0.31	4.64±0.22	6.06±0.29

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	... ...	+0.30 0.94	+0.25 0.46	+0.25 0.42	-5.10 8.23
Lebanon	-0.30 0.94	... ...	-0.05 0.09	-0.05 0.08	-5.40 8.57
Alawiya	-0.25 0.46	+0.05 0.09	... ...	0.00 0.00	-5.35 6.95
Damascus	-0.25 0.42	+0.05 0.08	0.00 0.00	... ...	-5.35 6.61
H-H-Aleppo	+5.10 8.23	+5.40 8.57	+5.35 6.95	+5.35 6.61	... ...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Northern Albanians	Coon	921	73.55±0.11
<i>Asia Minor</i>			
Mesopotamians (Kish)	Buxton and Rice	164	66.51±0.23
Tachtadschy and Bektasch	von Luschan	50	75.80±0.29
Mesopotamian Arabs	Ehrich	33	79.09±0.46

TABLE 21. UPPER FACIAL INDEX

	No.	Range	Mean	S. D.	C. V.
Total Syrians	264	40-63	52.61±0.15	3.51±0.10	6.67±0.20
Lebanon	165	43-63	52.70±0.17	3.24±0.12	6.15±0.23
Alawiya	53	43-60	52.10±0.32	3.42±0.22	6.56±0.43
Damascus	18	49-60	53.00±0.45	2.82±0.32	5.32±0.60
H-H-Aleppo	17	52-60	56.00±0.34	2.07±0.24	3.70±0.43
Armenians	100	45-64	53.07±0.23	3.43±0.16	6.39±0.30

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	... ...	-0.09 0.41	+0.51 1.46	-0.39 0.83	-3.39 6.52
Lebanon	+0.09 0.41	... ...	+0.60 1.67	-0.30 0.63	-3.30 8.46
Alawiya	-0.51 1.46	-0.60 1.67	... ...	-0.90 1.64	-3.90 8.30
Damascus	+0.39 0.83	+0.30 0.63	+0.90 1.64	... ...	-3.00 5.26
H-H-Aleppo	+3.39 6.52	+3.30 8.46	+3.90 8.30	+3.00 5.26	... ...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Northern Albanians	Coon	921	51.41±0.08
<i>Asia Minor</i>			
Mesopotamians (Kish)	Buxton and Rice	164	49.56±0.18
Tachtadschy and Bektasch	von Luschan	50	53.78±0.24
Mesopotamian Arabs	Ehrich	33	57.42±0.40

Of all the districts in Syria, Homs-Hama-Aleppo has the narrowest minimum frontal diameter and Lebanon the broadest. However, the differences between the various subgroups cannot be considered definitely significant.

The important fact brought out by the comparative table is that the various groups of the Balkans and northwest portion of Asia Minor have far greater frontal diameters than either our Syrians or Armenians. It is not clear why there should be such a great divergency between the means for the Boston Armenians and those measured by Twarjanowitsch, but it may be noted that anthropometrists frequently obtain excessive means for the minimum frontal diameter by allowing their caliper points to slip below the

TABLE 22. MINIMUM FRONTAL DIAMETER

	No.	Range	Mean	S. D.	C. V.
Total Syrians	263	93-124	106.82 \pm 0.21	5.08 \pm 0.15	4.76 \pm 0.14
Lebanon . . .	163	97-124	107.22 \pm 0.27	5.12 \pm 0.19	4.78 \pm 0.18
Alawiya . . .	53	93-116	106.42 \pm 0.46	4.96 \pm 0.32	4.66 \pm 0.31
Damascus . . .	19	97-116	106.94 \pm 0.60	3.88 \pm 0.42	3.63 \pm 0.40
H-H-Aleppo	17	93-120	105.54 \pm 1.01	6.20 \pm 0.72	5.87 \pm 0.68
Armenians . . .	101	97-121	107.75 \pm 0.31	4.60 \pm 0.22	4.27 \pm 0.21

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	. . . . .	-0.40 1.21	+0.40 0.80	-0.12 1.90	+1.28 1.24
Lebanon	+0.40 1.21	. . . . .	+0.80 1.51	+0.28 0.42	+1.68 1.62
Alawiya	-0.40 0.80	-0.80 1.51	. . . . .	-0.52 0.68	+0.88 0.79
Damascus	+0.12 1.90	-0.28 0.42	+0.52 0.68	. . . . .	+1.40 1.38
H-H-Aleppo	-1.28 1.24	-1.68 1.62	-0.88 0.79	-1.40 1.38	. . . . .

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Northern Albanians	Coon	1067	108.86 \pm 0.10
Bulgars	Pittard	200	111.2
Greeks	Pittard	145	112.06
<i>Asia Minor</i>			
Samaritans	Huxley	35	103.
Mesopotamian Arabs	Ehrich	33	104.15 \pm 0.57
Greeks of Asia Minor	Neophytos	142	104.28
Samaritans	Szpidbaum	27	104.3 \pm 0.65
Mesopotamians (Kish)	Buxton and Rice	104	107.39 \pm 0.21
Arabs	Mochi	29	107.72
Turks	Pittard	200	111.9
Tachtadschy and Bektasch	von Luschan	50	113.28 \pm 0.54
Kurds	Pittard	63	114.9
Armenians	Twarjanowitsch	105	118.55

temporal crests, thereby including the thickness of the temporal muscles.

Fronto-Parietal Index. The ratio of minimum frontal diameter to maximum head breadth is 68.80 for Syrians and 68.24 for Armenians. Syria as a whole is remarkably uniform in this characteristic.

All the series presented in the comparative table have higher fronto-parietal indices than our Syrians and Armenians. The Greeks of Asia Minor are the only exceptions. This phenomenon is due to the greater frontal diameters of the comparative groups rather than to any differences in cranial breadth.

TABLE 23. FRONTO-PARIETAL INDEX

	No.	Range	Mean	S. D.	C. V.
Total Syrians	262	60-77	68.80 \pm 0.13	3.12 \pm 0.09	4.53 \pm 0.13
Lebanon	162	60-77	68.56 \pm 0.16	3.06 \pm 0.11	4.46 \pm 0.17
Alawiya	53	60-77	68.92 \pm 0.31	3.30 \pm 0.22	4.79 \pm 0.31
Damascus	19	63-74	68.89 \pm 0.31	1.98 \pm 0.34	2.87 \pm 0.31
H-H-Aleppo	17	60-77	69.82 \pm 0.57	3.48 \pm 0.40	4.98 \pm 0.58
Armenians	101	61-74	68.24 \pm 0.18	2.68 \pm 0.12	3.85 \pm 0.18

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians		Lebanon	Alawiya	Damascus	H-H-Aleppo				
	diff.	x p.e.	diff.	x p.e.	diff.	x p.e.				
Total Syrians	...	...	+0.24	0.96	-0.12	0.34	-0.09	0.26	-1.02	1.76
Lebanon	-0.24	0.96	...	...	-0.36	1.00	-0.33	0.92	-1.26	2.14
Alawiya	+0.12	0.34	+0.36	1.00	...	...	+0.03	0.07	-0.90	1.38
Damascus	+0.09	0.26	+0.33	0.92	-0.08	0.07	...	...	-0.93	1.38
H-H-Aleppo	+1.02	1.76	+1.26	2.14	+0.90	1.38	+0.93	1.38	...	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Northern Albanians	Coon	1067	69.07 \pm 0.07
Greeks	Pittard	145	72.77
Bulgars	Pittard	200	74.14
<i>Asia Minor</i>			
Greeks of Asia Minor	Neophytos	142	66.17
Samaritans	Huxley	35	70.07 *
Mesopotamian Arabs	Ehrich	33	71.21 \pm 0.40
Arabs	Mochi	29	72.59 *
Kurds	Pittard	63	72.83
Turks	Pittard	200	73.38
Tachtadschy and Bektasch	von Luschan	50	74.40 \pm 0.33
Mesopotamians (Kish)	Buxton and Rice	164	74.84 *
Armenians	Twarjanowitsch	105	75.12 *
Samaritans	Szpidbaum	27	77.98 \pm 0.42

* Index of means.

Zygo-Frontal Index. Minimum frontal diameter expressed as a percentage of the bizygomatic diameter is 76.94 for Syrians and 75.61 for Armenians. The latter have a lower mean because they possess absolutely and relatively greater facial breadths than the Syrians.

There are no regional significant differences in Syria for this ratio. And again, because of their greater frontal diameters, the comparative groups have, on the whole, higher mean zygo-frontal indices.

TABLE 24. ZYGO-FRONTAL INDEX

	No.	Range	Mean	S. D.	C. V.
Total Syrians	262	64-91	76.94 \pm 0.14	3.48 \pm 0.10	4.52 \pm 0.13
Lebanon	163	68-91	77.14 \pm 0.18	3.32 \pm 0.12	4.30 \pm 0.16
Alawiya	53	68-87	76.74 \pm 0.31	3.36 \pm 0.22	4.38 \pm 0.29
Damascus	18	68-83	77.26 \pm 0.54	3.40 \pm 0.38	4.40 \pm 0.49
H-H-Aleppo	17	64-83	76.34 \pm 0.75	4.56 \pm 0.53	5.97 \pm 0.69
Armenians	101	68-92	75.61 \pm 0.24	3.52 \pm 0.17	4.66 \pm 0.22

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	... ...	-0.20 0.91	+0.20 0.57	-0.32 0.57	+0.60 0.79
Lebanon	+0.20 0.91	... ...	+0.40 1.11	-0.12 0.21	+0.80 1.04
Alawiya	-0.20 0.57	-0.40 1.11	... ...	-0.52 0.84	+0.40 0.49
Damascus	+0.32 0.57	+0.12 0.21	+0.52 0.84	... ...	+0.92 1.00
H-H-Aleppo	-0.60 0.79	-0.80 1.04	-0.40 0.49	-0.92 1.00	... ...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Northern Albanians	Coon	1067	76.74 \pm 0.08
Bulgars	Pittard	200	79.28
Greeks	Pittard	145	80.03
<i>Asia Minor</i>			
Greeks of Asia Minor	Neophytos	142	72.92
Mesopotamian Arabs	Ehrich	33	74.88 \pm 0.35
Arabs	Mochi	29	77.79 *
Samaritans	Szpidbaum	27	77.92 *
Samaritans	Huxley	35	78.3
Turks	Pittard	200	79.43
Tachtadschy and Bektaš	von Luschan	50	80.54 \pm 0.30
Mesopotamians (Kish)	Buxton and Rice	164	80.55 *
Kurds	Pittard	63	80.99
Armenians	Twarjanowitsch	105	82.64 *

* Index of means.

Bigonial Diameter. Bigonial diameter, or the breadth of the lower jaw at the gonial angles, is 107.62 millimeters for all Syrians.

The province of Damascus has the smallest bigonial diameter, and that of Homs-Hama-Aleppo, the largest. However, these differences are not statistically significant.

The Armenians with a mean of 109.94 millimeters have lower jaws of significantly greater breadth than those of the Syrians.

TABLE 25. BIGONIAL DIAMETER

	No.	Range	Mean	S. D.	C. V.
Total Syrians	263	86-125	107.62 \pm 0.25	5.96 \pm 0.18	5.54 \pm 0.16
Lebanon	165	86-125	107.46 \pm 0.33	6.20 \pm 0.23	5.77 \pm 0.21
Alawiya	53	94-121	107.82 \pm 0.54	5.84 \pm 0.38	5.42 \pm 0.36
Damascus	19	98-117	106.66 \pm 0.74	4.80 \pm 0.53	4.50 \pm 0.49
H-H-Aleppo	17	98-117	108.46 \pm 0.88	5.40 \pm 0.62	4.98 \pm 0.58
Armenians	101	97-128	109.94 \pm 0.43	6.48 \pm 0.31	5.89 \pm 0.28

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. \pm p.e.				
Total Syrians	...	+0.16 0.40	-0.20 0.34	+0.96 1.23	-0.84 0.92
Lebanon	-0.16 0.40	...	-0.36 0.58	+0.80 0.99	-1.00 1.08
Alawiya	+0.20 0.54	+0.36 0.58	...	+1.16 1.26	-0.64 0.62
Damascus	-0.96 1.23	-0.80 0.99	-1.16 1.26	...	-1.80 1.57
H-H-Aleppo	+0.84 0.92	+1.00 1.08	+0.64 0.62	+1.80 1.57	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Northern Albanians	Coon	1067	107.70 \pm 0.13
<i>Asia Minor</i>			
Mesopotamians (Kish)	Buxton and Rice	164	104.83 \pm 0.29
Armenians	Twarjanowitsch	105	112.26
<i>Caucasus</i>			
Caucasus Armenians	von Erckert	19	108.63 \pm 1.20

Zygo-Gonial Index. The ratio of bigonial to bizygomatic diameter is 77.26 for Syrians and 77.03 for Armenians. The residents of Damascus have relatively broader faces and narrower jaws than those from Lebanon, Alawiya, and Homs-Hama-Aleppo. And, in turn, the Homs-Hama-Aleppo district with a mean index of 78.13 has relatively narrower faces and broader jaws than the Lebanon, Alawiya, and Damascus groups.

Nose Height. Mean nose height for all Syrians is 55.22 millimeters. Of all the Syrian groups, the Homs-Hama-Aleppo have by far the longest noses. The Lebanon, Damascus, and Alawiya districts show no significant differences between their means, all approaching the nasal height of the total series.

On turning to the Armenians, we find that this group presents the astonishing mean nose height of 59.93 millimeters. This is far in excess of the Syrian mean, even including the longer-nosed Syrians of Aleppo. The Georgians of the Caucasus with a nose height of 60 millimeters are the only peoples in the comparative table who rival the Armenians in this feature.

In general, our Syrians may be said to fall in line with the longer-nosed groups of the Balkans, Asia Minor, and Caucasus.

TABLE 26. ZYGO-GONIAL INDEX

	No.	Range	Mean	S. D.	C. V.
Total Syrians	262	63-89	77.26 \pm 0.16	3.78 \pm 0.11	4.89 \pm 0.14
Lebanon	165	63-89	77.17 \pm 0.20	3.77 \pm 0.14	4.89 \pm 0.18
Alawiya	53	69-89	77.08 \pm 0.33	3.60 \pm 0.24	4.67 \pm 0.31
Damascus	18	72-83	76.84 \pm 0.41	2.61 \pm 0.29	3.40 \pm 0.38
H-H-Aleppo	17	66-86	78.13 \pm 0.73	4.47 \pm 0.52	5.72 \pm 0.66
Armenians	101	69-86	77.03 \pm 0.27	4.05 \pm 0.19	5.26 \pm 0.25

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	+0.09 0.35	+0.18 0.49	+0.42 0.93	-0.87 1.16
Lebanon	-0.09 0.35	...	+0.09 0.23	+0.33 0.72	-0.96 1.28
Alawiya	-0.18 0.49	-0.09 0.23	...	+0.24 0.45	-1.05 1.31
Damascus	-0.42 0.93	-0.33 0.72	-0.24 0.45	...	-1.29 1.54
H-H-Aleppo	+0.87 1.16	+0.96 1.28	+1.05 1.31	+1.29 1.54	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Northern Albanians	Coon	1067	75.73 \pm 0.08
<i>Asia Minor</i>			
Armenians	Twarjanowitsch	105	78.26
Mesopotamians (Kish)	Buxton and Rice	164	78.63 *
<i>Caucasus</i>			
Caucasus Armenians	von Erckert	19	76.47 \pm 0.69

* Index of means.

Nose Breadth. Mean nose breadth measured across the alae is of moderate dimensions in the Syrians. This diameter is nearly constant for the various subgroups, with the exception of the inhabitants of the Homs-Hama-Aleppo district. These people have narrower noses than may be found in any of the other provinces.

The Armenians again exceed the Syrians in nasal dimensions, this time by 3.20 millimeters. The Syrians then, have noses that are absolutely shorter and narrower than the Armenians.

The evidence derived from the comparative material is very con-

TABLE 27. NOSE HEIGHT

	No.	Range	Mean	S. D.	C. V.
Total Syrians	264	40-67	55.22±0.16	3.96±0.12	7.18±0.21
Lebanon . . .	165	44-67	55.18±0.20	3.76±0.14	6.81±0.25
Alawiya . . .	52	40-67	55.50±0.41	4.40±0.29	7.93±0.52
Damascus . . .	19	44-63	54.78±0.50	3.20±0.35	5.84±0.64
H-H-Aleppo	17	48-63	57.02±0.62	3.80±0.44	6.66±0.77
Armenians . . .	101	51-72	59.93±0.29	4.31±0.21	7.19±0.34

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	... . .	+0.04 0.15	-0.28 0.62	+0.44 0.83	-1.80 2.81
Lebanon	-0.04 0.15	... . .	-0.32 0.70	+0.40 0.74	-1.84 2.83
Alawiya	+0.28 0.62	+0.32 0.70	... . .	+0.72 1.11	-1.52 2.05
Damascus	-0.44 0.83	-0.40 0.74	-0.72 1.11	... . .	-2.24 2.84
H-H-Aleppo	+1.80 2.81	+1.84 2.83	+1.52 2.05	+2.24 2.84	... . .

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Bulgars	Pittard	200	51.93
Bulgars	Hasluck and Morant	100	50.85±0.25
Greeks	Pittard	145	52.3
Northern Albanians	Coon	1066	58.10±0.09
<i>Asia Minor</i>			
Mesopotamians (Kish)	Buxton and Rice	164	46.98±0.23
Arabs	Mochi	29	50.24
Greeks of Asia Minor	Neophytos	142	51.94
Turks	Pittard	200	52.48
Armenians	Hrdlicka	25	53.
Turks	Hasluck and Morant	200	53.95±0.22
Armenians	Chantre	292	53.98
Samaritans	Szpidbaum	27	54.33±0.45
Samaritans	Huxley	35	55.
Armenians	Weissenberg	20	55.
Kurds	Pittard	68	55.86
Mesopotamian Jews	Weissenberg	37	56.
Armenians	Boas	75	56.28±0.33
Mesopotamian Arabs	Ehrich	33	58.52±0.53
<i>Caucasus</i>			
Lesghians	Chantre	11	51.
Aissores	Chantre	22	52.
Caucasus Armenians	von Erckert	19	55.79±0.74
Caucasus Jews	Weissenberg	20	57.
Georgian Jews	Weissenberg	33	58.
Georgians	Dzhavahov	900	60.

fusing, the Armenians ranging in mean nose breadth from 30.40 millimeters to 37.17 millimeters. Our Armenians lean definitely towards the higher limit.

Nasal Index. Both the Syrians and Armenians display mean nasal indices that place them unquestionably among the lepto-

TABLE 28. NOSE BREADTH

	No.	Range	Mean	S. D.	C. V.
Total Syrians	264	22-42	34.76±0.12	2.91±0.09	8.37±0.25
Lebanon	164	22-42	34.79±0.15	2.88±0.11	8.28±0.31
Alawiya	53	25-42	34.67±0.26	2.79±0.18	8.05±0.53
Damascus	19	28-39	34.85±0.41	2.67±0.29	7.66±0.84
H-H-Aleppo	17	25-39	33.59±0.56	3.45±0.40	10.27±1.19
Armenians	101	31-45	37.96±0.18	2.69±0.13	7.09±0.34

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians	Lebanon	Alawiya	Damascus	H-H-Aleppo
	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.	diff. x p.e.
Total Syrians	...	-0.03 0.18	+0.09 0.32	-0.09 0.21	+1.17 2.05
Lebanon	+0.03 0.18	...	+0.12 0.40	-0.06 0.14	+1.20 2.11
Alawiya	-0.09 0.32	-0.12 0.40	...	-0.18 0.37	+1.08 1.74
Damascus	+0.09 0.21	+0.06 0.14	+0.18 0.37	...	+1.26 1.83
H-H-Aleppo	-1.17 2.05	-1.20 2.11	-1.08 1.74	-1.26 1.83	...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Bulgars	Hasluck and Morant	100	33.25±0.19
Northern Albanians	Coon	1066	33.77±0.06
Greeks	Pittard	145	35.9
Bulgars	Pittard	200	36.67
<i>Asia Minor</i>			
Armenians	Twarjanowitsch	105	30.40
Armenians	Weissenberg	20	33.
Mesopotamians (Kish)	Buxton and Rice	164	33.54±0.15
Mesopotamian Jews	Weissenberg	37	34.
Greeks of Asia Minor	Neophytos	142	34.26
Arabs	Mochi	29	35.10
Mesopotamian Arabs	Ehrlich	33	35.39±0.28
Armenians	Chantre	292	35.60
Armenians	Hrdlička	25	35.6
Turks	Hasluck and Morant	200	35.65±0.15
Turks	Pittard	200	36.63
Samaritans	Huxley	35	37.
Armenians	Boas	75	37.17±0.24
Samaritans	Szpidbaum	27	37.77±0.54
<i>Caucasus</i>			
Georgian Jews	Weissenberg	33	34.
Georgians	Dzhavahov	900	34.
Aissores	Chantre	22	35.
Caucasus Jews	Weissenberg	20	35.
Caucasus Armenians	von Erckert	19	35.74±0.58
Lesghians	Chantre	11	36.

rrhine stocks of mankind. Although the Armenians have longer and broader noses than the Syrians in absolute dimensions, their nasal indices are significantly alike.

The Homs-Hama-Aleppo district again stands apart from all the

TABLE 29. NASAL INDEX

	No.	Range	Mean	S. D.	C. V.
Total Syrians	262	40-83	63.26 ± 0.30	7.12 ± 0.21	11.26 ± 0.33
Lebanon . . .	164	44-83	63.30 ± 0.35	6.56 ± 0.24	10.36 ± 0.39
Alawiya . . .	52	40-83	62.74 ± 0.71	7.56 ± 0.50	12.05 ± 0.80
Damascus .	18	52-71	63.26 ± 0.80	5.04 ± 0.57	7.97 ± 0.90
H-H-Aleppo	17	40-75	58.66 ± 1.22	7.48 ± 0.87	12.75 ± 1.47
Armenians . . .	101	46-80	63.80 ± 0.62	6.22 ± 0.30	9.75 ± 0.46

DIFFERENCES BETWEEN SYRIAN MEANS

	Total Syrians diff. x p.e.	Lebanon diff. x p.e.	Alawiya diff. x p.e.	Damascus diff. x p.e.	H-H-Aleppo diff. x p.e.
Total Syrians	... -0.04 0.09	+0.52 0.68	0.00 0.00	+4.60 3.65	
Lebanon	+0.04 0.09	... +0.56 0.73	+0.04 0.05	+4.64 3.65	
Alawiya	-0.52 0.68	-0.56 0.73	... ...	-0.52 0.49	+4.08 2.89
Damascus	0.00 0.00	-0.04 0.05	+0.52 0.49	... ...	+4.60 3.15
H-H-Aleppo	-4.60 3.65	-4.64 3.65	-4.08 2.89	-4.60 3.15	... ...

COMPARATIVE DATA

		No.	Mean
<i>Balkans</i>			
Bulgars . . .	Pittard	200	52.87
Northern Albanians . . .	Coon	1066	58.38 ± 0.12
Bulgars . . .	Hasluck and Morant	100	65.80 ± 0.40
Greeks . . .	Pittard	145	68.49 ± 0.37
<i>Asia Minor</i>			
Armenians . . .	Weissenberg	20	60.0
Mesopotamian Jews . . .	Weissenberg	37	60.7
Mesopotamian Arabs . . .	Ehrlich	33	60.73 ± 0.71
Kurds . . .	Pittard	63	63.94
Greeks of Asia Minor . . .	Neophytos	142	66.
Armenians . . .	Chantre	202	66.04
Armenians . . .	Boas	75	66.04
Samaritans . . .	Huxley	35	66.4
Armenians . . .	Hrdlička	25	67.17 *
Turks . . .	Hasluck and Morant	200	67.20 ± 0.39
Turks . . .	Pittard	200	69.74
Samaritans . . .	Szpidbaum	27	69.87 ± 0.95
Arabs . . .	Mochi	29	71.48 *
Mesopotamians (Kish) . . .	Buxton and Rice	164	72.80 ± 0.46
<i>Caucasus</i>			
Georgians . . .	Dzhavahov	900	56.6
Georgian Jews . . .	Weissenberg	33	58.6
Caucasus Jews . . .	Weissenberg	20	61.4
Caucasus Armenians . . .	von Erckert	19	64.16 ± 1.19
Aissores . . .	Chantre	22	67.30
Lesghians . . .	Chantre	11	70.59

* Index of means.

rest in nasal proportions, with a mean hyperleptorrhine index of 58.66.

The groups whose mean nasal indices are below those of the Syrians and Armenians are as follows: in the Balkans, the Bulgars

and Northern Albanians; in Asia Minor, Weissenberg's Armenians and the Mesopotamian Jews and Arabs; in the Caucasus, the Georgians, Georgian Jews, and Caucasian Jews. All the other groups have higher nasal indices than the Syrians and the Armenians of Boston.

CONCLUSIONS OF THE METRICAL ANALYSIS

In this section, I have presented a description of the Syrians and Armenians, based solely upon a number of metrical criteria which are commonly accepted as being the most important features used in racial analyses. The status of these groups in relation to others in the Near East was also established, by comparisons with certain important series from the Balkans, Asia Minor, and the Caucasus.

Many interesting and vital relationships have appeared as a result of this survey, but these must wait until we have carefully examined the observational data. There are, however, several matters that should be considered at this point. The most important of these is the outcome of the resolution of the Syrian series into provincial groups. Does this subdivision of the Syrians into geographical districts bring to light any *significant* regional differences in metrical features? That there are numerous differences between subgroups, and that many of these differences are often of considerable magnitude, are facts that have already been noted. But before we can reach any definite conclusions as to the value of this evidence, we must first determine whether these differences may not have arisen as a result of the random sampling process. Thus, differences between two samples, solely as a result of the random sampling process, may be less than one times the probable error of the difference in 49.71 per cent of cases, may be from one to two times as large as the probable error of the difference in 32.58 per cent of cases, two to three times in 13.36 per cent of cases, three to four times the probable error of the difference in 3.64 per cent of cases, etcetera.

In order to prove that the differences found between Syrian groups are not merely due to the random sampling process, in table 30 I have tabulated a summary of the dispersion values of the x p.e. for 28 characters, measurements, and indices. According to the theoretical frequency of x p.e.'s for this number of features,

we may expect 13.92 criteria to have x p.e.'s between 0-1, 9.12 between 1-2, 3.74 between 2-3, etcetera.

If we examine the actual results obtained for the Syrian groups, we find that the closest fit to the normal or expected frequency of divergencies lies between the Total Syrians and the Lebanon and Alawiya districts. These two groups show no differences with the total series, as well as between themselves, that could not be wholly ascribed to the random sampling process.

On the other hand, the Damascus and Homs-Hama-Aleppo sub-groups stand apart from all the other series, with x p.e. values so

TABLE 30. DISPERSION OF VALUES OF x p.e. FOR 28 CHARACTERS

x p.e.	0-1	1-2	2-3	3-4	4-5	5-6	6+
Theoretical Expectation ..	13.92	9.12	3.74	1.02	0.17	0.02	0.00
Total Syrians— Lebanon ..	19	6	3	0	0	0	0
Total Syrians— Alawiya ..	16	8	3	0	1	0	0
Total Syrians— Damascus ..	15	5	3	2	1	1	1
Total Syrians— H-H-Aleppo ..	7	8	4	3	1	2	3
Lebanon — Alawiya	11	10	5	1	0	1	0
Lebanon — Damascus	15	6	2	2	1	1	1
Lebanon — H-H-Aleppo	5	10	4	2	1	1	5
Alawiya — Damascus	14	5	2	4	1	1	1
Alawiya — H-H-Aleppo	7	6	9	2	1	0	3
Damascus — H-H-Aleppo ...	5	13	3	5	0	1	1

far beyond the range of normal probability for a random sample that they must therefore be considered as anthropometrically individual populations.

The Homs-Hama-Aleppo district is more markedly differentiated from the Total Syrian series than the Damascenes, the former showing 9 characters with x p.e. values greater than three as against the latter's 5, in contrast to the normal expected frequency of 1.22 for a random sample population. The Lebanon group also presents more significant differences with the Homs-Hama-Aleppo series than with the Damascenes. The number of characters with x p.e. values of three or more amount to 9 between Lebanon and Homs-Hama-Aleppo in comparison with 5 between Lebanon and Damascus. And finally, a similar situation may be observed in the case of the Alawiin, for here too more significant differences occur in comparison with the Homs-Hama-Aleppo group than with the Damascenes.

If we pause to consider those features which distinguish the Syrians of Damascus from those of Lebanon and Alawiya, we find that

the former have shallower chests, higher relative sitting heights, longer and narrower heads, higher skull vaults, narrower faces, shorter noses and narrower jaws.

The Syrians of Homs-Hama-Aleppo are differentiated from the inhabitants of Lebanon and Alawiya, in their significantly taller statures, longer and narrower heads, heads higher absolutely as well as in relation to their breadth, smaller minimum frontal diameters, excessively longer faces, longer and narrower noses, and considerably broader jaws.

And in turn, the Syrians of Homs-Hama-Aleppo are distinguished from those of the Damascus district in having taller statures, broader and deeper chests, lower relative sitting heights, head lengths and breadths that are absolutely shorter and narrower but not relatively so, faces that are broader and markedly longer, and noses of greater length and diminished breadth.

In Syria, not only do we find regional differences in measurements and indices of head face and body, but also distinct dissimilarities in variability of these features as expressed by the coefficient of variation. In table 31 are listed the coefficients of variation for each characteristic in every subgroup as well as for the total series.

There is no doubt that the Damascus district is the most homogeneous and least variable of all in metrical features. The average coefficient, exclusive of age, is 4.24 for Damascus, compared with 5.39 for Lebanon, 5.48 for Alawiya, and 5.42 for Homs-Hama-Aleppo.

We have already called the reader's attention to the limited age range and age variability of the Damascus group. Unquestionably, the smaller coefficients of variation of these people are to be ascribed in part to this fact. But if one considers the small size of the series, only 19 individuals, and the constant manner in which this group varies from the rest, there still remain adequate grounds for concluding that the Syrians of Damascus are more homogeneous than those from the other districts.

The group with the next smallest variability is that of the Homs-Hama-Aleppo provinces. This series, although only represented by 17 subjects, has a mean coefficient that is but 0.03 units greater than that of the Lebanon district with 165 individuals. There are no significant differences between the Lebanon and Alawiya subgroups in homogeneity and variability of metrical features.

TABLE 31. SYRIAN COEFFICIENTS OF VARIATION*

	Total	Lebanon	Alawiya	Damascus	H-H-Aleppo
Age	33.40	30.08	33.28	<i>13.68</i>	26.88
Stature	3.98	3.98	4.25	3.96	<i>3.65</i>
Biacromial diameter	6.48	6.89	5.57	6.18	<i>4.28</i>
Relative shoulder breadth	5.63	5.71	6.17	<i>3.57</i>	<i>5.24</i>
Sitting height	3.98	4.11	3.85	<i>3.32</i>	4.15
Relative sitting height	3.32	2.85	4.26	3.04	<i>2.76</i>
Chest breadth	7.11	7.53	5.63	6.33	6.44
Chest depth	9.05	8.71	7.71	<i>5.46</i>	12.56
Head length	4.18	4.11	3.90	<i>3.30</i>	4.01
Head breadth	3.42	3.39	3.39	<i>2.71</i>	2.99
Cephalic index	5.11	4.30	5.56	<i>3.74</i>	4.23
Head height	5.59	5.88	4.81	<i>2.83</i>	4.65
Length-height index	6.22	5.89	7.24	<i>4.50</i>	8.06
Breadth-height index	5.60	5.25	4.19	4.80	<i>7.22</i>
Head circumference	3.05	3.08	2.95	<i>2.35</i>	2.71
Bizygomatic diameter	3.85	3.86	4.05	3.53	<i>3.03</i>
Cephalo-facial index	3.55	3.03	4.09	<i>2.67</i>	<i>2.65</i>
Total face height	4.96	5.11	4.80	<i>3.07</i>	4.07
Facial index	5.01	4.99	5.13	<i>3.09</i>	3.53
Upper face height	6.69	6.48	7.44	<i>4.96</i>	4.56
Upper facial index	6.67	6.15	6.56	<i>5.32</i>	3.70
Minimum frontal diameter	4.76	4.78	4.66	<i>3.63</i>	5.87
Fronto-parietal index	4.53	4.46	4.79	<i>2.87</i>	4.98
Zygo-frontal index	4.52	4.30	4.38	4.40	<i>5.97</i>
Bigonial diameter	5.54	5.77	5.42	<i>4.50</i>	4.98
Zygo-gonial index	4.89	4.89	4.67	<i>3.40</i>	5.72
Nose height	7.18	6.81	7.93	<i>5.84</i>	6.66
Nose breadth	8.37	8.28	8.05	<i>7.66</i>	10.27
Nose index	11.26	10.36	12.05	<i>7.97</i>	12.75
Average	5.52	5.39	5.48	<i>4.24</i>	<i>5.42</i>

* That constant which is the lowest for each measurement has been italicized to aid the reader in evaluating these results.

Syrians and Armenians. A comparison between the Armenians and Syrians in measurements and indices is contained in table 32, in the form of a summary of the differences of the means and their *x p.e.*'s. Because of the strong geographical differentiation in Syria the Armenians were contrasted with the Homs-Hama-Aleppo and Damascus groups, in addition to the Total Syrian series, the latter representing the Lebanon and Alawiya districts.¹

A glance at this table is sufficient to convince the reader that the Armenians differ significantly from the Syrians in metrical char-

¹ The Total Syrian series is taken to represent the Lebanon and Alawiya districts, inasmuch as the metrical analysis proved that the latter were comparable to a random sample series of the total population.

acteristics. The Armenians show significant divergencies from the Total Syrians in as many as 8 out of 13 measurements and 5 out of 12 indices. Similarly, the Armenians are significantly differentiated from the Damascus group in 8 out of 13 measurements and 3 out of 12 indices, and from the Homs-Hama-Aleppo district in 5 out of 13 measurements and 6 out of 12 indices.

TABLE 32. COMPARISON BETWEEN ARMENIANS AND SYRIANS

DIFFERENCES AND \times p.e.*

<i>Measurements</i>	Armenians —		Armenians —		Armenians —	
	Total Syrians	diff. \times p.e.	Damascus	diff. \times p.e.	H-H-Aleppo	diff. \times p.e.
Stature	+1.03	1.81	+0.43	0.39	+3.25	3.01
Biacromial diameter	-0.59	3.28	-0.74	1.90	-0.29	1.45
Sitting height	-0.49	1.75	-0.10	0.20	+0.29	0.45
Head length	-1.24	2.34	+4.07	3.88	+1.88	1.46
Head breadth	-2.43	6.23	-4.23	5.88	-6.18	7.63
Head height	+0.53	0.93	+1.87	2.49	+2.22	1.52
Bizygomatic diameter	-3.99	8.49	-5.54	6.37	-4.09	5.05
Total face height	-5.06	9.73	-5.16	7.07	-1.56	1.63
Upper face height	-3.81	10.30	-4.06	6.34	+1.29	1.96
Minimum frontal diameter	-0.93	2.51	-0.81	1.19	-2.21	2.08
Bigonial diameter	-2.32	4.73	-3.28	3.64	-1.48	1.53
Nose height	-4.71	14.27	-5.15	9.04	-2.91	4.28
Nose breadth	-3.20	16.00	-3.11	6.91	-4.37	7.54
Average difference		2.33		2.97		2.46
<i>Indices</i>						
Relative shoulder breadth . . .	-0.53	5.30	-0.53	3.53	-0.43	1.95
Relative sitting height	-0.97	6.93	-0.05	0.18	-1.25	4.63
Cephalic index	-0.70	2.33	-4.03	7.60	-4.27	7.00
Length-height index	+0.88	2.67	+0.37	0.67	+0.97	1.01
Breadth-height index	+1.80	4.87	+3.78	5.32	+5.01	4.72
Cephalo-facial index	-0.76	2.81	-0.49	1.11	+1.49	2.66
Facial index	-1.16	2.83	-0.48	0.84	+2.00	3.08
Upper facial index	-1.06	3.93	-0.67	1.34	+2.33	5.68
Fronto-parietal index	+0.56	2.43	+0.65	1.81	+1.58	2.68
Zygo-frontal index	+1.33	4.75	+1.65	2.80	+0.73	0.95
Zygo-gonial index	+0.23	0.72	-0.19	0.39	+1.10	1.41
Nasal index	-0.54	0.78	-0.54	0.53	-5.13	3.75
Average difference		0.88		1.12		2.19

* Significant differences, that is differences three or more times their probable errors, are in italics.

The Armenians show closer relationships with the Total Syrian series than with the Damascus and Homs-Hama-Aleppo groups. The average difference between the Armenians and Total Syrians is 2.33 in the case of the measurements and only 0.88 for the indices. This signifies, therefore, no wide divergence in type, but rather a distinction in absolute dimensions. The inferences to be drawn

from this fact are of considerable importance, as we shall see later in our final analysis of the Syrian data. Where the Armenians differ from the Total Syrians is in the possession of larger mean diameters in all the measurements, with the exception of stature and head height. In the proportions of these dimensions, the differences, although often statistically significant, are on the whole quite small. The largest are to be found in the breadth-height, total facial, upper facial, and zygo-frontal indices.

The most important disparities between the Armenians and the Damascus Syrians show the latter group to be, in absolute dimensions, excessively longer-headed, much narrower-headed, smaller in facial width, shorter in facial length, narrower in breadth of the jaws, and shorter and narrower in the nose. The significant differences in the proportions of these dimensions make the Damascenes narrower in the shoulders in relation to the total height of the body, considerably more dolichocephalic (4.03 millimeters), and more akrocephalic.

And finally, the comparison between the means of the Armenians and the Homs-Hama-Aleppo Syrians makes the latter significantly taller in stature, much narrower in head breadth (6.18 millimeters), narrower in facial width, and shorter and narrower in the nasal dimensions. In indices, the Syrians from the above district are shorter in sitting height relative to the stature, much more dolichocephalic and akrocephalic in the skull vault, more leptoprosopic and leptene in facial proportions, and much more leptorrhine in the nasal index.

MORPHOLOGICAL OBSERVATIONS

Skin. Skin was observed for color and freckling. No skin color chart was used by the investigator.

Table 33 indicates that, in general, the Syrians have skins that are light brown in color, the only other category of any size being the pale white type amounting to 16.67 per cent. The Syrians of Damascus and Homs-Hama-Aleppo subgroups possess skins of a lighter hue than those of the other districts, the former having 33.33 per cent of the pale white type and the latter 11.76 per cent of the red-white variety.

TABLE 33. SKIN COLOR

	SIAMANS					
	Total	Lebanon	Alawiya	Damascus	H-H-Aleppo	
	No.	No.	No.	No.	No.	No.
Red-white	7	2.71	4	2.44	1	1.96
Pale white	43	16.67	29	17.68	5	9.80
Ruddy	1	0.39	1	0.61	..	..
Olive	..	..	..	..	..	..
Light yellow-brown	..	..	..	..	..	..
Light brown	190	73.64	120	73.17	40	78.43
Medium yellow-brown	1	0.39	1	0.61	..	..
Medium red-brown	10	3.88	5	3.05	4	7.84
Copper	2	0.78	1	0.61	1	1.96
Dark brown	4	1.55	3	1.83	..	..
Black	..	..	..	..	..	..
Totals	258	100.01	164	100.00	51	99.99
					18	100.00
					17	100.00

TABLE 34. FRECKLES

	SIAMANS					
	Total	Lebanon	Alawiya	Damascus	H-H-Aleppo	
	No.	No.	No.	No.	No.	No.
None	195	88.64	113	87.60	45	88.24
Few	20	9.09	15	11.63	3	5.88
Many	5	2.27	1	0.78	3	5.88
Totals	220	100.00	129	100.01	51	100.00
					17	100.00
					16	100.00

Freckling is practically absent in Syrians. Few freckles were observed in only 9.09 per cent of cases, and many in 2.27 per cent.

Hair. Table 35 gives the amount of development of hair on the head, face, and body of Syrians and Armenians.

Syrians have for the most part a moderate amount of head hair, but nevertheless lean toward the heavier types. Armenians, on the other hand, are endowed with a smaller growth of head hair than the Syrians. Of the Syrian groups, Damascus and Homs-Hama-Aleppo have fewer individuals in the thick-haired category.

The Armenians have heavier beards than the Syrians. There are no particular regional significant differences among the latter, except in the case of the Damascus district whose residents are less bearded. This is probably due to the fact that the Syrians of Damascus are the youngest in the series, having a mean age of 21.20.

In body hair, the Syrians, in general, show a slight or medium development, although there are not a few individuals whose bodies

TABLE 35. HAIR QUANTITY, COLOR, FORM, AND TEXTURE

HAIR QUANTITY	SIAMANS						ARMENIANS					
	Total		Lebanon		Alawiya							
	No.	Per cent	No.	Per cent	No.	Per cent						
<i>Head</i>												
Small	46	17.97	27	16.77	12	23.08	3	16.67	3	18.75	39	39.00
Medium	137	53.52	81	50.31	27	51.92	13	72.22	11	68.75	47	47.00
Large	73	28.52	53	32.92	13	25.00	2	11.11	2	12.50	14	14.00
Totals	256	100.01	161	100.00	52	100.00	18	100.00	16	100.00	100	100.00
<i>Beard</i>												
Small	59	26.11	44	32.59	8	15.69	4	25.00	2	12.50	13	13.13
Medium	142	62.83	75	55.56	37	72.55	12	75.00	11	68.75	65	65.65
Large	25	11.06	16	11.85	6	11.76	..	..	3	18.75	21	21.21
Totals	226	100.00	135	100.00	51	100.00	16	100.00	16	100.00	99	99.99
<i>Body</i>												
Small	90	42.45	54	42.52	26	52.00	5	35.71	2	13.33	..	..
Medium	76	35.85	43	33.86	18	36.00	6	42.86	9	60.00	..	..
Large	46	21.70	30	23.62	6	12.00	3	21.43	4	26.67	..	..
Totals	212	100.00	127	100.00	50	100.00	14	100.00	15	100.00	..	..
<i>HAIR COLOR</i>												
Black	121	46.90	79	49.07	24	47.06	6	31.58	6	35.29	18	17.82
Dark brown	111	43.02	68	42.24	22	43.14	10	52.63	9	52.94	59	58.42
Reddish brown	2	0.78	1	0.62	1	1.96	..	..	..	..	2	1.99
Light brown	..	..	..	..	..	..	..	..	..	..	9	8.91
Ash-blond	8	3.10	7	4.35	..	..	1	5.26	..	..	..	..
Golden	..	..	..	..	..	..	..	..	..	..	..	..
Red	1	0.39	..	..	..	..	1	5.26	..	..	13	12.85
Gray, white	15	5.81	6	3.73	4	7.84	1	5.26	2	11.76	..	..
Totals	258	100.00	161	100.01	51	100.00	19	99.99	17	99.99	101	99.99
<i>HAIR FORM</i>												
Straight	54	21.77	28	18.18	18	36.73	5	27.78	2	11.76	3	2.97
Low waves	127	51.21	85	55.19	20	40.82	6	33.33	11	64.71	82	81.19
Deep waves	35	14.11	19	12.34	7	14.29	6	33.33	3	17.65	14	13.86
Curly	32	12.90	22	14.29	4	8.16	1	5.56	1	5.88	2	1.98
Frizzly	..	..	..	..	..	..	..	..	..	..	..	..
Woolly	..	..	..	..	..	..	..	..	..	..	..	..
Totals	248	99.99	154	100.00	49	100.00	18	100.00	17	100.00	101	100.00
<i>HAIR TEXTURE</i>												
Coarse	26	9.96	18	10.98	6	11.54	2	10.53	..	..	14	14.74
Medium	155	59.39	90	54.88	37	71.15	10	52.03	10	58.82	77	81.05
Fine	80	30.65	56	34.15	9	17.31	7	36.84	7	41.18	4	4.21
Totals	261	100.00	164	100.01	52	100.00	19	100.00	17	100.00	95	100.00

can be called very hairy. The Syrians of Alawiya are the least hairy of all, while those of Homs-Hama-Aleppo have the greatest quantity of body hair.

Hair color is divided between black and dark brown in Syrians, with only about 10 per cent of the total having any of the lighter hues. The Armenians, however, are considerably lighter-haired, with the black type appearing in but 17.82 per cent of cases. The Syrians of Damascus and Homs-Hama-Aleppo are not as dark-haired as those from Lebanon and Alawiya.

In table 35 I have also tabulated the various types of hair form and texture. In about one-half of the total number of Syrians the hair falls in low waves, in almost one-quarter it is straight, and in the remainder either curly or in deep waves. The inhabitants of Alawiya have the largest percentage of the straight variety, while Damascus stands forth with the deep wave type. The Armenians of Boston, in contrast to the Syrians, are practically lacking in straight or curly hair, being mainly confined to the low wave form.

In texture, the hair of Armenians is much less fine than that of Syrians as a whole. The Homs-Hama-Aleppo district has no examples of the coarse variety, but exemplifies the Syrian type with 41.18 per cent of fine hair.

Table 36 gives the observation on the thickness, concurrency, and lateral extension of the eyebrows. Eyebrows are medium to very thick in Syrians, but on the whole are not as heavy as those of the Armenians. There are no regional differences of any great significance in this characteristic.

Concurrent eyebrows are present in about three-fourths of Syrians and Armenians. When this trait is present it is found mainly in a submedium condition. The Syrians of Homs-Hama-Aleppo show the greatest frequency of the pronounced type. The inhabitants of Alawiya possess the least amount of lateral extension of the eyebrows, and those of Damascus and Homs-Hama-Aleppo have the greatest.

Eyes. Of the Syrians 68.34 per cent have dark brown eyes, and only 12.74 per cent have the light brown type. As many as 18 per cent possess mixed eyes, half of this number belonging to the green-brown variety. The Armenians differ from the Syrians in having less of the dark brown-eyed elements and considerably more of the light brown and mixed-eyed types. Of the Syrian groups, Homs-

THE RACIAL CHARACTERISTICS

TABLE 36. EYEBROWS

	SYRIANS					ARMENIANS	
	Total	Lebanon	Alawiya	Damascus	H-H-Aleppo	No. Per cent	
THICKNESS	No. Per cent	No. Per cent	No. Per cent	No. Per cent	No. Per cent	No. Per cent	No. Per cent
Submedium	88 14.56	29 17.79	4 7.55	2 10.53	2 11.76	8 8.00	
Medium	140 53.64	78 47.85	37 69.81	10 52.63	9 52.94	55 55.00	
Pronounced	88 31.80	56 34.36	12 22.64	7 36.84	6 35.29	37 37.00	
Totals	261 100.00	163 100.00	53 100.00	19 100.00	17 99.99	100 100.00	
CONCURRENCY							
Absent	62 23.66	38 23.17	13 24.53	3 15.79	5 29.41	27 27.00	
Submedium	122 46.56	80 48.78	24 45.28	9 47.37	6 35.29	43 43.00	
Medium	64 24.43	39 23.78	11 20.75	7 36.84	4 23.53	20 20.00	
Pronounced	14 5.34	7 4.27	5 9.43	.. ..	2 11.76	10 10.00	
Totals	262 99.99	164 100.00	53 99.99	19 100.00	17 99.99	100 100.00	
LATERAL EXTENSION							
Submedium	39 14.89	25 15.24	11 20.75	1 5.26	1 5.88	.. ..
Med., pronounced	223 85.11	139 84.76	42 79.25	18 94.74	16 94.12	.. ..
Totals	262 100.00	164 100.00	53 100.00	19 100.00	17 100.00	.. ..

Hama-Aleppo has less of the light brown eyes and more of the mixed eyes than any of the other provinces.

The sclera was clear in every case in Armenians, but the speckled variety was observed in 40.23 per cent of Syrians. The distribution of pigment of the iris is more homogeneous in Armenians than in Syrians. Both groups show more than 20 per cent of the rayed type.

Table 37 also gives the height and obliquity of the palpebral opening. There are no significant differences between Syrians and Armenians in observations of the height of the palpebral opening, but in obliquity the Armenians have a greater percentage of individuals, with no apparent elevation or depression of the lateral borders of the eyelids. When obliquity is present in Armenians, it is mainly directed upwards and not downwards as in Syrians.

Eye folds are absent in 58.54 per cent of Syrians, and in 88.12 per cent of Armenians. There are only 3 cases of internal epicanthic folds recorded for the Syrians, this feature being entirely lacking in Armenians. Median eye folds are by far the most numerous. The Damascus subgroup distinguishes itself from the rest in having eye folds in almost 90 per cent of cases, most of them being of the external variety.

TABLE 37. OBSERVATIONS ON EYE COLOR, SCLERA AND IRIS, PALPEBRAL OPENING, AND EYE FOLDS

EYE COLOR	SYRIANS						ARMENIANS	
	Total		Lebanon		Alawiya		H-H-Aleppo	No. Per cent
	No.	Per cent	No.	Per cent	No.	Per cent	No.	
Dark brown	177	68.34	110	67.48	36	69.23	14	77.78
Light brown	33	12.74	26	15.95	4	7.69	1	5.56
Blue-brown	5	1.93	1	0.61	3	5.77	..	..
Gray-brown	5	1.93	3	1.84	1	1.92	..	..
Green-brown	26	10.04	15	9.20	7	13.46	2	11.11
Blue	7	2.70	6	3.68	1	1.92	..	..
Blue-gray	6	2.32	2	1.23	..	..	1	5.56
Totals	259	100.00	163	99.99	52	99.99	18	100.01
<i>Sclera</i>								
Clear	146	55.94	102	62.20	21	39.62	9	47.37
Speckled	105	40.23	57	34.76	27	50.94	10	52.03
Yellow	10	3.83	5	3.05	5	9.43	..	..
Totals	261	100.00	164	100.01	53	99.99	19	100.00
<i>Iris</i>								
Homogeneous	135	56.02	89	58.55	22	47.83	9	47.37
Rayed	61	25.31	41	26.97	10	21.74	6	31.58
Zoned	17	7.05	10	6.58	5	10.87	1	5.26
Speckled	27	11.20	12	7.89	8	17.39	3	15.79
Diffuse	1	0.41	..	..	1	2.17	..	..
Totals	241	99.99	152	99.99	46	100.00	19	100.00
<i>PALPEBRAL OPENING</i>								
<i>Height</i>								
Submedium	58	22.31	37	22.84	11	20.75	5	26.32
Medium	170	65.38	101	62.35	37	69.81	12	63.16
Pronounced	32	12.31	24	14.81	5	9.43	2	10.53
Totals	260	100.00	162	100.00	53	99.99	19	100.01
<i>Oblliquity</i>								
Up small	11	4.42	7	4.52	2	3.85	1	5.56
Up medium	..	..	..	..	..	..	..	..
Up pronounced	..	..	..	..	..	..	..	..
None	154	61.85	92	59.35	38	73.08	10	55.56
Down small	74	29.72	48	30.97	11	21.15	7	38.89
Down med., pro.	10	4.02	8	5.16	1	1.92	..	..
Totals	249	100.01	155	100.00	52	100.00	18	100.01
<i>EYE FOLDS</i>								
Epicanthus	3	1.22	1	0.65	..	..	1	5.26
Median	79	32.11	53	34.19	13	27.08	7	36.84
External	20	8.13	12	7.74	5	10.42	9	47.37
Absent	144	58.54	89	57.42	30	62.50	2	10.53
Totals	246	100.00	155	100.00	48	100.00	19	100.00
							15	100.00
							101	100.00

Nose. Table 38 deals with the depression at the root of the nose. In general, the Syrians show a slight or moderately developed nasion depression. The Armenians, on the other hand, are distinguished by the fact that three-fourths of their number have submedium depressions at the nasion region. Of the Syrians, the Damascus group approaches the Armenian condition most closely, with 52.63 per cent in the submedium class.

A convex profile is the predominant type among the Syrians, particularly those from the Homs-Hama-Aleppo district. Nevertheless, the straight and concavo-convex profiles are present in considerable numbers. The concave type appears in 9.12 per cent of cases. The Armenians divide their profiles almost wholly between the straight and convex types, there being twice as many convex as straight.

The nasal root in Syrians is of medium height in 60 per cent and very high in 34.34 per cent of individuals. The Armenians differ from the Syrians in having a majority of very high nasal roots, the medium class occupying a secondary position. In root breadth, the Syrians and Armenians are practically alike; if anything the latter have somewhat narrower noses in the upper portion.

The nasal bridge of Syrians is distinctly elevated, almost half of their number being in the pronounced class. Nevertheless, in Armenians the bridge of the nose is still higher, with 77.23 per cent displaying the extremely elevated form.

The Syrians show practically the same figures for nasal bridge breadth as for nasal height, their noses being in most cases quite broad. The Armenians again differ from the Syrians, this time having significantly narrower noses in the region of the bridge.

Table 39 shows that Syrians have nasal tips that are moderately thick in the majority of cases, with a strong tendency toward the very thick type. The nasal tips of Armenians are thicker than those of the Syrians, the former having 36.63 per cent of individuals in the pronouncedly heavy division.

In 68.65 per cent of Syrians the nasal tip is elevated, and in 30.16 per cent it was found to be depressed. In the Damascus district the percentage of depressed noses rises to 61.11 per cent. The Armenians, with two-thirds of their number of this type, display a much greater development of the "ultra-armenoid" nasal tip.

Both in Syrians and Armenians, the profile of the nasal septum

TABLE 38. OBSERVATIONS ON NASION DEPRESSION, NASAL PROFILE, NASAL ROOT, AND NASAL BRIDGE

NASION DEPRESSION	SYRIANS						ARMENIANS	
	Total		Lebanon		Alawiya		Damascus	H-H-Aleppo
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Absent.....	4	1.52	4	2.44	..	..	..	1 0.99
Submedium.....	92	34.98	63	38.41	12	23.08	10	52.63
Medium.....	153	58.17	91	55.49	36	69.23	8	42.11
Pronounced.....	14	5.32	6	3.66	4	7.69	1	5.26
Totals.....	263	99.99	164	100.00	52	100.00	19	100.00
NASAL PROFILE								
Concave.....	24	9.12	15	9.15	4	7.69	2	10.53
Straight.....	46	17.49	35	21.34	4	7.69	4	21.05
Convex.....	153	58.17	87	53.05	35	67.31	11	57.89
Concavo-convex.....	40	15.21	27	16.46	9	17.31	2	10.53
Totals.....	263	99.99	164	100.00	52	100.00	19	100.00
NASAL ROOT								
<i>Height</i>								
Submedium.....	15	5.66	8	4.85	3	5.66	1	5.26
Medium.....	159	60.00	97	58.79	35	66.04	10	52.63
Pronounced.....	91	34.34	60	36.36	15	28.30	8	42.11
Totals.....	265	100.00	165	100.00	53	100.00	19	100.00
<i>Breadth</i>								
Submedium.....	23	8.71	15	9.09	3	5.77	..	..
Medium.....	172	65.15	105	63.64	37	71.15	13	68.42
Pronounced.....	69	26.14	45	27.27	12	23.08	6	31.58
Totals.....	264	100.00	165	100.00	52	100.00	19	100.00
NASAL BRIDGE								
<i>Height</i>								
Submedium.....	7	2.64	5	3.03	1	1.89	1	5.26
Medium.....	137	51.70	86	52.12	26	49.06	11	57.89
Pronounced.....	121	45.66	74	44.85	26	49.06	7	36.84
Totals.....	265	100.00	165	100.00	53	100.01	19	99.99
<i>Breadth</i>								
Submedium.....	11	4.17	9	5.45	..	..	..	1 5.88
Medium.....	141	53.41	89	53.94	28	53.85	9	47.37
Pronounced.....	112	42.42	67	40.61	24	46.15	10	52.63
Totals.....	264	100.00	165	100.00	52	100.00	19	100.00

TABLE 39. OBSERVATIONS ON NASAL TIP, NASAL SEPTUM, AND NASAL WINGS

NASAL TIP	STRIANS						ARMENIANS	
	Total		Lebanon		Alawiya		Damascus	H-H-Aleppo
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
<i>Thickness</i>								
Submedium	31	11.79	25	15.15	4	7.55	1	5.56
Medium	178	67.68	111	67.27	34	64.15	13	72.22
Pronounced	54	20.53	29	17.58	15	28.30	4	22.22
Totals	263	100.00	165	100.00	53	100.00	18	100.00
<i>Elevation</i>								
Submedium								
Medium	173	68.65	109	70.78	38	73.08	7	38.89
Pronounced							12	70.59
Submedium								
Medium	76	30.16	44	28.58	13	25.00	11	61.11
Pronounced							5	29.41
Absent	3	1.19	1	0.65	1	1.92	..	..
Totals	252	100.00	154	100.01	52	100.00	18	100.00
<i>Depression</i>								
Submedium								
Medium	76	30.16	44	28.58	13	25.00	11	61.11
Pronounced							5	29.41
Absent	3	1.19	1	0.65	1	1.92	..	..
Totals	252	100.00	154	100.01	52	100.00	18	100.00
<i>NASAL SEPTUM</i>								
<i>Profile</i>								
Straight	143	53.96	90	54.55	29	54.72	9	47.37
Concave	9	3.40	4	2.42	5	9.43	..	..
Convex	113	42.64	71	43.03	19	35.85	10	52.63
Totals	265	100.00	165	100.00	53	100.00	19	100.00
<i>Inclination</i>								
Up	173	67.84	109	70.32	38	71.70	7	36.84
Down	76	29.80	44	28.39	13	24.53	11	57.89
Absent	6	2.35	2	1.29	2	3.77	1	5.26
Totals	255	99.99	155	100.00	53	100.00	19	99.99
<i>Deflection</i>								
Right	11	4.21	9	5.52	..	..	2	10.53
Left	12	4.60	5	3.07	4	7.55	1	5.26
Absent	233	91.19	149	91.41	49	92.45	16	84.21
Totals	261	100.00	163	100.00	53	100.00	19	100.00
<i>NASAL WINGS</i>								
Compressed	16	6.20	9	5.56	7	13.21	..	..
Medium	185	71.71	108	66.67	41	77.36	16	88.89
Flaring	57	22.09	45	27.78	5	9.43	2	11.11
Totals	258	100.00	162	100.01	53	100.00	18	100.00
							16	100.00
							101	100.00

is almost always straight or convex. The Syrians have only 3.40 per cent of individuals with concave profiles.

Of the Syrian groups, the Damascus district has the largest number of septa with profiles that slope downwards. One-third of the Damascenes have septa that incline upwards. This type of septum is found in only 55.21 per cent of Armenians. Horizontal nasal septa, for this group, reach a total of 11.46 per cent, while the depressed type may be seen in one-third of all Armenians.

The Syrians as a whole, have moderate to flaring nasal wings. The Alawiin have the largest number of compressed types. A very high degree of nasal wing development is typical of the Armenians of Boston, 31.68 per cent having flaring nostrils.

Lips. The thickness of the integument of the lip is greater in Armenians than in Syrians. The reverse is the case for the membranous portion of the lip, where the Syrians exceed the Armenians in thickness.

A lip seam is absent or slightly developed in 22.63 per cent of Syrians and 45.45 per cent of Armenians. The latter have only 4.04 per cent of their number with pronounced lip seams, while in the Syrians this percentage rises to 21.40. Lip seams, therefore, are more frequent and more highly developed in Syrians than in Armenians.

TABLE 40. LIP THICKNESS AND LIP SEAM

LIP THICKNESS	SYRIANS					ARMENIANS						
	Total	Lebanon	Alawiya	Damascus	H-H-Aleppo	No. Per cent	No. Per cent					
<i>Integumental</i>												
Submedium	43	16.29	25	15.24	11	20.75	3	15.79	2	11.76	5	5.10
Medium	195	73.86	126	76.83	36	67.92	12	63.16	13	76.47	70	71.43
Pronounced	26	9.85	13	7.93	6	11.32	4	21.05	2	11.76	23	23.47
Totals	264	100.00	164	100.00	53	99.99	19	100.00	17	99.99	98	100.00
<i>Membranous</i>												
Submedium.....	81	30.68	45	27.44	22	41.51	6	31.58	3	17.65	39	39.80
Medium	150	56.82	100	60.98	23	43.40	12	63.16	11	64.71	58	59.18
Pronounced	33	12.50	19	11.59	8	15.09	1	5.26	3	17.65	1	1.02
Totals	264	100.00	164	100.01	53	100.00	19	100.00	17	100.01	98	100.00
<i>LIP SEAM</i>												
Absent or submed.	55	22.63	32	20.51	10	22.22	5	27.78	5	33.33	45	45.45
Medium	136	55.97	92	58.97	22	48.89	9	50.00	8	55.55	50	50.50
Pronounced	52	21.40	32	20.51	13	28.89	4	22.22	2	13.33	4	4.04
Totals	243	100.00	156	99.99	45	100.00	18	100.00	15	99.99	99	99.99

Forehead and Temporal Region. Table 41 gives the height, breadth, and slope of the forehead. The frontal regions of Syrians are usually of medium height, with not a few cases which could be classified as submedium or low foreheads. The highest frontal regions of all are found among the inhabitants of Homs-Hama-Aleppo, and the lowest among the Alawiin. In general, the Armenians have lower foreheads than the Syrians.

Both the Syrians and Armenians have frontal regions of more than moderate breadth. The latter are distinctly superior to the Syrians in this characteristic with 45 per cent of their number showing very broad foreheads compared to 31.70 per cent for the total Syrians.

The slope of the forehead is absent or submedium in 51.89 per cent of Syrians, and in only 21 per cent of Armenians. A greater percentage of markedly sloping foreheads is found for Armenians than for Syrians.

The continuous type of brow ridge is found among the Syrians as often as the median type. Whether or not the brow ridges are median or continuous, the prevailing amount of development is submedium. There are only 24 per cent of Syrians with moderately sized brow ridges. In the Armenians, the brow ridges are more developed, 43.56 per cent being in the medium class and 10.89 per cent of the pronounced type.

In Syrians, the prominence of the glabella is markedly below the normal European standard, with practically three-fourths of the individuals showing a submedium development. The Armenians, following the condition of the brow ridges, have more prominent glabellar regions than the Syrians. Nevertheless, they too show a majority of cases with a subnormal development of the glabellar prominence.

The fullness of the temporal region is determined as medium in Syrians, and pronounced in Armenians. The Damascus district has the greatest percentage of individuals with flat temples, the actual figure being 26.32 per cent.

Occipital Region. In Syrians, the protrusion of the occiput is usually of submedium development or entirely absent. The center of greatest occipital protrusion may be found in the Damascus district, and that of the least occipital protrusion in the northwest coastal province of Alawiya.

TABLE 41. FOREHEAD, BROW RIDGES, GLABELLA, AND TEMPORAL FULLNESS

FOREHEAD	SIANIANS					ARMENIANS		
	Total		Lebanon		Alawiya	Damascus		
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
<i>Height</i>								
Submedium	50	18.87	23	13.94	18	33.96	1	5.26
Medium	193	72.83	127	76.97	33	62.26	18	94.74
Pronounced	22	8.30	15	9.09	2	3.77	..	..
Totals	265	100.00	165	100.00	53	99.99	19	100.00
<i>Breadth</i>								
Submedium	16	6.04	9	5.45	5	9.43	..	..
Medium	165	62.26	102	61.82	32	60.38	13	68.42
Pronounced	84	31.70	54	32.73	16	30.19	6	31.58
Totals	265	100.00	165	100.00	53	100.00	19	100.00
<i>Slope</i>								
Absent, submed.	137	51.89	108	65.45	12	22.64	8	42.11
Medium	109	41.29	50	30.30	30	56.60	11	57.89
Pronounced	18	6.82	7	4.24	11	20.75	..	..
Totals	264	100.00	165	99.99	53	99.99	19	100.00
BROW RIDGES								
Median, submed..	99	40.24	66	43.14	18	36.00	4	21.05
Median, medium	19	7.72	9	5.88	4	8.00	2	10.53
Median, pro.	6	2.44	3	1.96	2	4.00	1	5.26
Cont., submedian	51	20.73	35	22.88	9	18.00	4	21.05
Cont., medium...	43	17.48	26	16.99	8	16.00	5	26.32
Cont., pro.	13	5.28	6	3.92	5	10.00	..	..
Absent.....	15	6.10	8	5.23	4	8.00	3	15.79
Totals	246	99.99	153	100.00	50	100.00	19	100.00
GLABELLA								
Submedium	192	73.28	130	79.75	33	62.26	11	57.89
Medium	58	22.14	29	17.79	14	26.42	7	36.84
Pronounced	12	4.58	4	2.45	6	11.32	1	5.26
Totals	262	100.00	163	99.99	53	100.00	19	99.99
TEMPORAL FULLNESS								
Submedium	45	17.17	28	17.07	7	13.46	5	26.32
Medium	174	66.41	104	63.41	58	73.08	13	68.42
Pronounced	43	16.41	32	19.51	7	13.46	1	5.26
Totals	262	99.99	164	99.99	52	100.00	19	100.00

* In the Armenian series brow ridges were not distinguished as to type, median or continuous.

THE RACIAL CHARACTERISTICS

As is expected, the Armenians show a much smaller development of the occipital region than the Syrians. Only 5.94 per cent of their occiputs are of medium character, compared to 20.45 per cent in Syrians. The Armenians present 92.08 per cent of their number in the submedium category.

TABLE 42. OCCIPITAL PROTRUSION

	SYRIANS					ARMENIANS
	Total No. Per cent	Lebanon No. Per cent	Alawiya No. Per cent	Damascus No. Per cent	H-H-Aleppo No. Per cent	No. Per cent
Absent.....	29 10.98	15 9.15	11 20.75	.. ..	1 5.88	.. ..
Submedium.....	174 65.91	106 64.63	37 69.81	12 63.16	12 70.59	93 92.08
Medium.....	54 20.45	38 23.17	4 7.55	6 31.58	4 23.53	6 5.94
Pronounced.....	7 2.65	5 3.05	1 1.89	1 5.26	.. ..	2 1.98
Totals	264 100.00	164 100.00	53 100.00	19 100.00	17 100.00	101 100.00

TABLE 43. POSTCRANIAL FLATTENING

	SYRIANS					ARMENIANS
	Total No. Per cent	Lebanon No. Per cent	Alawiya No. Per cent	Damascus No. Per cent	H-H-Aleppo No. Per cent	
Absent.....	15 5.70	9 5.49	3 5.66	.. ..	1 6.25	
Present.....	248 94.30	155 94.51	50 94.34	19 100.00	15 93.75	
Totals	263 100.00	164 100.00	53 100.00	19 100.00	16 100.00	

In observing the Syrians, the investigator made no distinction between lambdoid and occipital flattening, both being recorded as postcranial. Postcranial flattening, therefore, of either type, was recorded for 94.30 per cent of cases. In the Damascus district, every individual examined had some degree of postcranial flattening. The Armenians, however, were distinguished as to position of flattening, the occipital type being found more frequently than the lambdoid form. Both occipital and lambdoid flattening, when present, were described as being of moderate to pronounced development.

TABLE 44. POSTCRANIAL FLATTENING

	ARMENIANS			
	Occipital		Lambdoid	
	No.	Per cent	No.	Per cent
Absent	5	4.95	33	32.67
Very small	13	2.97	1	0.99
Submedium	14	13.86	10	9.90
Medium	46	45.54	42	41.58
Pronounced	31	30.69	14	13.86
Very pronounced	2	1.98	1	0.99
Totals	101	99.99	101	99.99

Face. Table 45 describes the degree of development of alveolar and total facial prognathism. In Syrians, alveolar prognathism is present in about 20 per cent of cases, while total facial protrusion is almost entirely lacking. Of the Syrian districts, Alawiya and Damascus show the greatest development of alveolar protrusion and Homs-Hama-Aleppo the least. Only one of 101 Armenians was observed to show alveolar prognathism, and this merely of sub-medium character. Total facial protrusion among these peoples is more frequent than the alveolar form, occurring in 9 out of 101 individuals.

The fullness of the cheek is a rather unsatisfactory observation, inasmuch as its degree of development is greatly dependent on the nutritional condition of the subject. According to the figures presented in table 45, the Syrians are very hollow-cheeked, and the Armenians show moderate to very puffy cheeks. But this is probably only a reflection of the better fed condition of the Bostonian Armenians.

Prominence of the malars is one of the most striking features of the face by which Armenians are distinguished from Syrians. The Armenians display a pronounced development of the malars, while the Syrians are subnormal in this characteristic. This fact was also brought out metrically by the bizygomatic diameter, the mean of the Armenians far exceeding that of the Syrians.

Gonial angles are very prominent in Armenians, and only moderately so in Syrians. There are no regional significant differences in Syria for this characteristic.

Observations on the chin reveal no differences between Syrians and Armenians in the degree of prominence, both having, in the

TABLE 45. PROGNATHISM

	SYRIANS					ARMENIANS	
	Total	Lebanon	Alawiya	Damascus	H-H-Aleppo	No. Per cent	
ALVEOLAR	No. Per cent	No. Per cent	No. Per cent	No. Per cent	No. Per cent	No. Per cent	No. Per cent
Absent.....	211 80.53	143 87.73	30 57.69	12 63.16	16 94.12	100 99.01	
Submedium.....	41 15.65	16 9.82	17 32.69	7 36.84	.. ..	1 0.99	
Medium.....	10 3.82	4 2.45	5 9.62	.. ..	1 5.88	.. ..
Pronounced.....	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Totals.....	262 100.00	163 100.00	52 100.00	19 100.00	17 100.00	101 100.00	
FACIAL							
Absent.....	254 96.95	159 98.15	48 92.31	19 100.00	16 94.12	92 91.09	
Submedium.....	6 2.29	1 0.62	4 7.69	.. ..	1 5.88	8 7.92	
Medium.....	1 0.38	1 0.62	.. ..	.. ..	.. ..	1 0.99	
Pronounced.....	1 0.38	1 0.62	.. ..	.. ..	.. ..	.. ..
Totals.....	262 100.00	162 100.01	52 100.00	19 100.00	17 100.00	101 100.00	

TABLE 46. CHEEKS

	SYRIANS					ARMENIANS	
	Total	Lebanon	Alawiya	Damascus	H-H-Aleppo	No. Per cent	
FULLNESS	No. Per cent	No. Per cent	No. Per cent	No. Per cent	No. Per cent	No. Per cent	No. Per cent
Submedium.....	118 45.38	70 43.48	30 56.60	8 42.11	7 41.18	9 12.86	
Medium.....	119 45.77	79 49.07	20 37.74	10 52.63	6 35.29	40 57.14	
Pronounced.....	23 8.85	12 7.45	3 5.66	1 5.26	4 23.53	21 30.00	
Totals.....	260 100.00	161 100.00	53 100.00	19 100.00	17 100.00	70 100.00	
WRINKLING							
Absent.....	224 86.49	143 88.82	42 80.77	15 78.95	15 88.24	.. ..
Slight, medium ..	30 11.58	16 9.94	8 15.38	4 21.05	2 11.76	.. ..
Pronounced.....	5 1.93	2 1.24	2 3.85	.. ..	.. ..	.. ..
Totals.....	259 100.00	161 100.00	52 100.00	19 100.00	17 100.00	.. ..

TABLE 47. MALARS PROMINENCE

	SYRIANS					ARMENIANS	
	Total	Lebanon	Alawiya	Damascus	H-H-Aleppo	No. Per cent	
	No. Per cent						
Submedium.....	104 40.15	72 45.00	14 26.92	7 36.84	6 35.29	8 8.33	
Medium.....	135 52.12	84 52.50	24 46.15	11 57.89	11 64.71	44 45.83	
Pronounced.....	20 7.72	4 2.50	14 26.92	1 5.26	.. ..	44 45.83	
Totals.....	259 99.99	160 100.00	52 99.99	19 99.99	17 100.00	96 99.99	

TABLE 48. PROMINENCE OF GONIAL ANGLES

	SYRIANS					ARMENIANS	
	Total No. Per cent	Lebanon No. Per cent	Alawiya No. Per cent	Damascus No. Per cent	H-H-Aleppo No. Per cent	No. Per cent	
Submedium	44 16.99	29 18.01	8 15.09	3 15.79	3 17.65	3 3.03	
Medium	157 60.62	95 59.01	34 64.15	11 57.89	11 64.71	46 46.46	
Pronounced	58 22.39	37 22.98	11 20.75	5 26.32	3 17.65	50 50.50	
Totals	259 100.00	161 100.00	53 100.00	19 100.00	17 100.01	99 99.99	

TABLE 49. CHIN

PROMINENCE	SYRIANS					ARMENIANS	
	Total No. Per cent	Lebanon No. Per cent	Alawiya No. Per cent	Damascus No. Per cent	H-H-Aleppo No. Per cent	No. Per cent	
Absent	1 0.38	1 0.61	1 0.38	1 2.32	1 29.41	1 2.79	
Submedium	89 33.84	56 34.36	19 35.85	5 26.32	5 29.41	28 29.79	
Medium	133 50.57	84 51.53	26 49.06	9 47.37	9 52.94	53 56.38	
Pronounced	40 15.21	22 13.50	8 15.09	5 26.32	3 17.65	13 15.83	
Totals	263 100.00	163 100.00	53 100.00	19 100.01	17 100.00	94 100.00	
FORM							
Median	134 51.54	91 56.17	21 40.38	8 42.11	7 41.18	30 42.25	
Bilateral	126 48.46	71 43.83	31 59.62	11 57.89	10 58.82	41 57.75	
Totals	260 100.00	162 100.00	52 100.00	19 100.00	17 100.00	71 100.00	

main, moderate to slightly protruding mental eminences. The bilateral chin form is found more often than the median type in Armenians, and in Syrians from Alawiya, Damascus, and Homs-Hama-Aleppo. Those from Lebanon display a greater number of the median variety.

Teeth. All the Syrians in this series have completely erupted dentitions. The wear of the enamel on the grinding surface is only of slight or medium development in Syrians.

Caries were observed in about 35 per cent of cases, and missing teeth in slightly less. Shovel incisors were found in almost every Syrian examined.

An underbite, one in which the lower teeth come into the normal position anterior to the upper, is absent in Syrians and appears in 4.12 per cent of Armenians. The most common form for Armenians is the slight overbite, while the Syrians have a greater percentage of the marked-over type.



TABLE 50. TEETH

ERUPTION	SYRIANS					ARMENIANS
	Total	Lebanon	Alawiya	Damascus	H-H-Aleppo	
	No. Per cent					
Complete	177 100.00	110 100.00	39 100.00	9 100.00	15 100.00	.. ..
3rd M. unerupted						
3rd M. part erupted						
Total	177 100.00	110 100.00	39 100.00	9 100.00	15 100.00	.. ..
WEAR						
None						
Slight, medium ..	241 93.05	151 92.64	49 94.23	18 94.74	15 88.24	.. ..
Pronounced	18 6.95	12 7.36	3 5.77	1 5.26	2 11.76	.. ..
Totals	259 100.00	163 100.00	52 100.00	19 100.00	17 100.00	.. ..
CARIES						
None	163 63.92	99 61.49	35 70.00	11 57.89	11 64.71	.. ..
Few	44 17.25	30 18.63	8 16.00	4 21.05	1 5.88	.. ..
Many	48 18.82	32 19.88	7 14.00	4 21.05	5 29.41	.. ..
Totals	255 99.99	161 100.00	50 100.00	19 99.99	17 100.00	.. ..
LOST						
None	172 67.45	117 72.22	28 53.85	11 61.11	12 75.00	.. ..
Few	53 20.78	30 18.52	12 23.08	6 33.33	2 12.50	.. ..
Many	30 11.76	15 9.26	12 23.08	1 5.56	2 12.50	.. ..
Totals	255 99.99	182 100.00	52 100.01	18 100.00	16 100.00	.. ..
SHOVEL INCISORS						
Absent	2 0.87	1 0.69	1 1.96	.. ..	.. ..	.. ..
Present	228 99.13	144 99.31	50 98.04	14 100.00	14 100.00	.. ..
Totals	230 100.00	145 100.00	51 100.00	14 100.00	14 100.00	.. ..
BITE						
Under .....	.. ..	.. ..	.. ..	.. ..	.. ..	4 4.12
Edge-to-edge	28 11.91	16 10.88	8 17.39	1 5.26	2 12.50	26 26.80
Slight over	93 39.57	54 36.73	24 52.17	7 36.84	6 37.50	65 67.01
Marked over	114 48.51	77 52.38	14 30.43	11 57.89	8 50.00	2 2.06
Totals	235 99.99	147 99.99	46 99.99	19 99.99	16 100.00	97 99.99

Ear. In Syrians, the ear lobes are usually medium or pronounced in size and development. The youngest Syrian group, Damascus, has of course the smallest ear lobes of all. The Armenians, in general, possess smaller ear lobes than the Syrians with the exception of the Damascus district.

The ears of Syrians lie very close to the head in 49.04 per cent of cases, compared to 23.94 per cent in Armenians. Very few examples of pronouncedly outstanding ears are found in either group.

TABLE 51. EAR LOBES

SIZE	SIYRIANS					ARMENIANS	
	Total No. Per cent	Lebanon No. Per cent	Alawiya No. Per cent	Damascus No. Per cent	H-H-Aleppo No. Per cent	No. Per cent	
Submedium	43 16.23	23 13.94	9 16.98	7 36.84	2 11.76	29 28.71	
Medium	136 51.32	79 47.88	35 66.04	9 47.37	9 52.94	51 50.50	
Pronounced	86 32.45	63 38.18	9 16.98	3 15.79	6 35.20	21 20.79	
Totals	265 100.00	165 100.00	53 100.00	19 100.00	17 99.99	101 100.00	
ATTACHMENT							
Attached	76 29.00	42 25.77	19 36.54	9 47.37	5 29.41	18 22.50	
Free	186 70.99	121 74.23	33 63.46	10 52.63	12 70.59	62 77.50	
Totals	262 99.99	163 100.00	52 100.00	19 100.00	17 100.00	80 100.00	

TABLE 52. EAR PROTRUSION

	SIYRIANS					ARMENIANS	
	Total No. Per cent	Lebanon No. Per cent	Alawiya No. Per cent	Damascus No. Per cent	H-H-Aleppo No. Per cent	No. Per cent	
Submedium	128 49.04	75 46.30	28 52.83	8 44.44	11 64.71	17 23.94	
Medium	102 39.08	65 40.12	21 39.02	10 55.56	2 11.76	47 66.20	
Pronounced	31 11.88	22 18.58	4 7.55	.. ..	4 23.53	7 9.86	
Totals	261 100.00	162 100.00	53 100.00	18 100.00	17 100.00	71 100.00	

TABLE 53. ROLL OF HELIX

	SIYRIANS					ARMENIANS	
	Total No. Per cent	Lebanon No. Per cent	Alawiya No. Per cent	Damascus No. Per cent	H-H-Aleppo No. Per cent	No. Per cent	
Absent	8 1.16	2 1.23	1 1.92	.. ..	.. ..	.. ..
Submedium	142 54.83	95 58.28	25 48.08	9 47.37	9 52.94	26 26.00	
Medium, pronounced	114 44.01	66 40.49	26 50.00	10 52.63	8 47.06	74 74.00	
Totals	259 100.00	163 100.00	52 100.00	19 100.00	17 100.00	100 100.00	

TABLE 54. ANTIHELIX PROMINENCE

	SIYRIANS					ARMENIANS	
	Total No. Per cent	Lebanon No. Per cent	Alawiya No. Per cent	Damascus No. Per cent	H-H-Aleppo No. Per cent	No. Per cent	
Submedium	125 47.71	72 44.17	31 58.49	8 44.44	9 52.94	21 21.43	
Medium	126 48.09	83 50.92	20 37.74	10 55.56	7 41.18	63 64.29	
Pronounced	11 4.20	8 4.91	2 3.77	.. ..	1 5.88	14 14.29	
Totals	262 100.00	163 100.00	53 100.00	18 100.00	17 100.00	98 100.01	

TABLE 55. DARWIN'S POINT

	SIYANI					ARMENIANS
	Total	Lebanon	Alawiya	Damascus	H-H-Aleppo	
	No. Per cent					
Absent.....	213 81.61	130 79.75	44 84.62	16 84.21	15 88.24	84 83.17
Submedium, medium ..	43 16.48	28 17.18	8 15.38	3 15.79	2 11.76	16 15.84
Pronounced	5 1.92	5 3.07	.. ..	.. ..	.. ..	1 0.99
Totals	261 100.01	163 100.00	52 100.00	19 100.00	17 100.00	101 100.00

A slight roll of the helix was observed in more than half of the Syrians examined. In the Armenians, however, the slight roll was found in only 26 per cent of individuals, and the moderate to pronounced condition in 74 per cent. The antihelix is more prominent in Armenians than in Syrians, the latter being very slightly developed in this characteristic.

Darwin's point is absent in 81.61 per cent of Syrians and 83.17 per cent of Armenians. Whenever present it is usually small or medium in size. A pronounced Darwin's point was observed in 5 of 261 Syrians, and in one of 101 Armenians.

CONCLUSIONS OF THE MORPHOLOGICAL ANALYSIS

In summary, one may say that the detailed analysis of the morphological criteria proves that the Syrian subgroups follow the same general geographical distinctions that were apparent in the metrical data. On the basis of the number and character of the consistently significant similarities between the Lebanon and Alawiya groups on the one hand, and between the Damascus and Homs-Hama-Aleppo districts on the other, Syria as a whole again falls into the twofold classification of inland and coastal areas. The inland groups are unquestionably more markedly differentiated from the total Syrian series in morphological features than the coastal ones. The Lebanon district shows the smallest number of differences from the total series, so few in fact that statistically this group is probably comparable to a random sample series of the population. The Alawiya Syrians present more differences than the Lebanese, which in numerous instances are large enough to be considered statistically significant. The Homs-Hama-Aleppo district is the most divergent of all the subgroups in character and extent of the differences. And finally, the Damascus unit shows

fewer differences from the total series than the Homs-Hama-Aleppo district, but more than those displayed by the coastal Lebanon and Alawiya groups.

In a review of the more salient features by which the subgroups are differentiated, the Lebanon district would scarcely show sufficient examples to warrant a separate consideration on a racial basis. The Alawiya group, however, exhibits a considerable number of criteria in which it differs from the inland Damascus and Homs-Hama-Aleppo areas as well as from the total series. The Alawiin may be said to have darker¹ skin colors, a heavier development of the head hair, the least amount of hair on the torso and extremities, the largest representation of the straight variety of hair form. The residents of Alawiya have less of the thick eyebrows, the greatest frequency of the compressed nasal wings, less of the clear sclera, the least amount of obliquity of the palpebral opening, the lowest foreheads, the greatest frequency of the pronounced sloping foreheads, the least protuding occiputs, more alveolar prognathism, and the most protruding malars in comparison with all the other groups.

The Damascus unit is on the whole lighter-skinned than the coastal Alawiya and Lebanon provinces, and shows less development of the hair on the head and face. The Damascenes exhibit a greater lateral extension of the eyebrows, and in reference to all the other groups they present the greatest frequency of the external eye fold, the least amount of depression at the nasion region, the greatest frequency of depressed nasal tips, the greatest frequency of profiles of the septa which slope downwards, the flattest temples, the most protruding occiputs, and the smallest ear lobes.

The Homs-Hama-Aleppo district also shows a greater frequency of the lighter skin colors, less development of the head hair, but is the hairiest of all the subgroups in distribution over the body. The representatives of this group have, on the whole, hair that is lighter in color, finer in texture, and in form of the deep wave type. They also display considerable lateral extension of the eyebrows, the largest number of pronouncedly concurrent eyebrows, the largest occurrence of mixed eyes, the greatest frequency of the convex nasal profiles, and the highest foreheads.

¹ In this and the following summaries, a superlative means that the group under discussion is extreme in comparison to the other three: when a comparative is used, the implication is that the group under discussion differs from the other three in its general trend, but does not necessarily stand at the extreme variability of the category.

GENERAL ANALYSIS OF THE ARMENIAN MATERIAL

It is increasingly evident as we proceed with the description and presentation of the material that our Armenian series does not represent a perfectly homogeneous group. Despite the fact that this series exhibits many definitive anthropometric and morphological characteristics, there exists adequate evidence for the presumption of the admixture of several foreign elements in the population. The detection and identification of these foreign elements, in addition to an investigation of the characteristics of the relatively pure original Armenoid population, therefore, become the important problems that must be considered at this point.

Eye Color Analysis. The study of the many morphological features just presented reveals the fact that eye color is one of the most variable features among the Armenians, this series showing eyes ranging in color from dark brown up the scale to blue-gray. The presence in the population of these diverse eye color forms suggested to Dr. Coon the possibility that a metrical and morphological analysis of these various eye color types might give clues as to the identification of the racial elements which introduced them into the population. Accordingly, all the Armenians were separated into three categories, those with dark brown eyes, those showing light brown eyes, and finally those individuals with mixed light eyes. For each of these groups, in table 56, the means of the most important measurements and indices have been calculated and contrasted.

A cursory glance at this interesting table is sufficient to convince the reader that the various eye color groups sort into metrically distinctive types showing significant differences all along the line. Of these groups the light brown-eyed individuals stand apart from the rest in the greater number and size of the differences. The light brown-eyed individuals are the lowest in stature, have the shortest head length, the widest heads, the highest cephalic indices, the lowest skull vaults, the widest frontal diameters, faces that are in absolute dimensions longer and broader but not relatively so; they also have the longest noses and the narrowest noses, the lowest nasal indices, and by far the broadest jaws.

The mixed light-eyed group shows the tallest statures, the longest heads, the lowest cephalic indices, the narrowest frontal diameters,

TABLE 56. METRICAL EYE COLOR ANALYSIS

	ARMENIANS		
	Dark brown (18)	Light brown (59)	Mixed light (24)
Stature	166.61	165.51	167.38
Head length	184.56	183.75	186.00
Head breadth	157.28	158.22	157.38
Cephalic index	85.39	86.32	84.88
Head height	130.61	125.31	128.54
Minimum frontal diameter	107.62	108.14	106.92
Bizygomatic diameter	140.17	143.74	142.74
Total face height	125.95	128.38	127.99
Facial index	89.65	89.66	89.96
Nose height	57.84	61.90	58.62
Nose breadth	38.94	37.80	37.92
Nasal index	67.78	61.97	64.92
Bigonial diameter	108.16	111.60	107.66

DIFFERENCES BETWEEN MEANS

	Light brown vs. Dark brown	Light brown vs. Mixed light	Dark brown vs. Mixed light
Stature	-1.10	-1.87	-0.77
Head length	-0.81	-2.25	-1.44
Head breadth	+0.94	+0.84	-0.10
Cephalic index	+0.93	+1.44	+0.51
Head height	-5.30	-3.23	+2.07
Minimum frontal diameter	+0.52	+1.22	+0.70
Bizygomatic diameter	+3.57	+1.00	-2.57
Total face height	+2.43	+0.39	-2.04
Facial index	+0.01	-0.30	-0.31
Nose height	+3.36	+2.58	-0.78
Nose breadth	-1.14	-0.12	+1.02
Nasal index	-5.81	-2.95	+2.86
Bigonial diameter	+3.44	+3.94	+0.50

relatively longer and narrower faces, as well as the narrowest bigonial diameters. They are intermediate in position to the light brown and dark brown groups in head breadth, head height, face breadth, face height, and the nasal dimensions.

The dark brown-eyed individuals, except in presenting the narrowest heads, the highest heads, the narrowest and shortest faces, the shortest and broadest noses, occupy an intermediate position to the mixed light and light brown-eyed groups.

Certain facts are therefore already clear at this point. The light brown-eyed type, as far as metric characters are concerned, seems to accentuate the features of the group as a whole. This type appears to form the backbone of the Armenian population not only on

the basis of its representative size, but principally in reference to the particular nature of its physical complex. The clear cut association of mixed light and light eye colors with taller statures, longer heads, lower cephalic indices, narrower frontal diameters, longer and narrower faces, and narrower jaws suggests the definite presence in this Armenian series of some amount of Nordic blood. Accordingly, the mixed light-eyed group may be said to represent an Armenian population originally possessing the general characteristics of the light brown-eyed type, which had been modified by the absorption of a Nordic strain. On turning to the consideration of the dark brown-eyed group, we find that there is an easily recognizable identification of the dominating element, for the association of dark brown eyes with narrower and higher heads, narrower and shorter faces, and shorter noses, signifies the segregation from the series as a whole of a generalized Mediterranean-Arab-Berber admixture.

If we go deeper into the question of this pigmentation phenomenon by a similar analysis of the morphological features, in table 57, we find that the light brown-eyed individuals show on the whole heavier beards, more frequent presence of the low wavy hair form, more of the dark brown hair and less of the black, more individuals who lack concurrence of the eyebrows, more with the pronounced form of concurrent eyebrows and less of the submedium and medium categories, very much less developed brow ridges, lower foreheads, less pronounced nasion depressions, much higher nasal roots, thicker nasal tips, a greater frequency of the medium broad nasal wings and less of the flaring and compressed types, thicker membranous lips, less pronounced prominence of the malars and more of the medium type, and probably a greater frequency of postcranial flattening.

The mixed light-eyed group has associated with it the greatest percentage of small beards, less of the dark hair and more of the light hair color, thinner eyebrows, more of the submedium category of eyebrow concurrence and less of the medium and pronounced types, more sloping foreheads, deeper nasion depressions, absence of concave profiles and an excess of the straight and concavo-convex forms, thinner nasal tips, less of the depressed type of nasal tips, and more frequent absence of postcranial flattening.

The dark brown-eyed individuals show more curly hair, greater

TABLE 57. EYE COLOR ANALYSIS

	SYRIANS			ARMENIANS		
	Dark brown No. Per cent	Light brown No. Per cent	Mixed light No. Per cent	Dark brown No. Per cent	Light brown No. Per cent	Mixed light No. Per cent
HAIR QUANTITY, BEARD						
Small	34 22.97	9 31.03	15 32.61	2 13.33	3 5.08	4 16.67
Medium	93 62.84	18 62.07	29 63.04	8 53.33	21 35.59	11 45.83
Large	21 14.19	2 6.90	2 4.35	5 33.33	35 59.32	9 37.50
Totals	148 100.00	29 100.00	46 100.00	15 99.99	59 99.99	24 100.00
HAIR QUANTITY, BODY						
Small	60 48.48	12 46.15	18 40.00	.. ..	.. ..	.. ..
Medium	44 31.89	9 34.62	21 46.67	.. ..	.. ..	.. ..
Large	34 24.64	5 19.23	6 13.33	.. ..	.. ..	.. ..
Totals	138 100.01	26 100.00	45 100.00	.. ..	.. ..	.. ..
HAIR FORM						
Straight.....	32 19.28	8 25.81	14 30.43	1 5.56	2 3.39	.. ..
Low waves	93 56.02	14 45.16	17 36.96	13 72.22	51 86.44	18 75.00
Deep waves	21 12.65	5 16.13	9 19.57	3 16.67	5 8.47	6 25.00
Curly	20 12.05	4 12.90	6 13.04	1 5.56	1 1.69	.. ..
Totals	166 100.00	31 100.00	46 100.00	18 100.01	59 99.99	24 100.00
HAIR COLOR						
Black	99 56.90	10 31.25	12 24.49	6 35.29	7 14.89	5 20.83
Dark brown	68 39.08	19 59.38	22 44.90	11 64.71	35 74.47	13 54.17
Mixed light	7 4.02	3 9.39	15 30.61	.. ..	5 10.64	6 25.00
Totals	174 100.00	32 100.02	49 100.00	17 100.01	47 100.00	24 100.00
EYEBROWS, THICKNESS						
Submedium	25 14.29	6 18.18	7 14.29	1 5.88	5 8.47	3 12.50
Medium	91 52.00	16 48.48	29 59.18	9 52.94	30 50.85	16 66.67
Pronounced	59 33.71	11 33.33	13 26.53	7 41.18	24 40.68	5 20.83
Totals	175 100.00	33 99.99	49 100.00	17 100.00	59 100.00	24 100.00
EYEBROWS, CONCURRENCY						
Absent	39 22.16	10 30.30	12 24.49	1 5.88	21 35.59	5 20.83
Submedium	80 45.45	18 54.55	23 46.94	9 52.94	17 28.81	17 70.83
Medium	48 27.27	4 12.12	10 20.41	6 35.29	12 20.34	2 8.33
Pronounced	9 5.11	1 3.03	4 8.16	1 5.88	9 15.25	.. ..
Totals	176 99.99	33 100.00	49 100.00	17 99.99	59 99.99	24 99.99
BROW RIDGES						
Submedium	98 59.75	17 56.67	30 63.83	3 17.65	36 60.00	7 29.17
Medium	43 26.21	9 30.00	10 21.28	10 58.82	21 35.00	13 54.17
Pronounced	14 8.53	1 3.33	4 8.51	4 23.53	3 5.00	4 16.67
Absent	9 5.50	3 10.00	3 6.38	.. ..	.. ..	.. ..
Totals	164 99.99	30 100.00	47 100.00	17 100.00	60 100.00	24 100.01

TABLE 57. EYE COLOR ANALYSIS (Continued)

	SYRIANS						ARMENIANS					
	Dark brown		Light brown		Mixed light		Dark brown		Light brown		Mixed light	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
FOREHEAD HEIGHT												
Submedium	37	20.90	3	9.09	9	18.37	1	5.88	23	38.98	6	25.00
Medium	123	69.49	27	81.82	38	77.55	14	82.35	33	55.93	17	70.83
Pronounced	17	9.60	3	9.09	2	4.08	2	11.76	3	5.08	1	4.17
Totals	177	99.99	33	100.00	49	100.00	17	99.99	59	99.99	24	100.00
FOREHEAD BREADTH												
Submedium	13	7.35	..	..	3	6.12	1	5.88	1	1.69	1	4.17
Medium	113	63.84	20	60.61	29	59.18	9	52.94	30	50.85	15	62.50
Pronounced	51	28.81	13	39.39	17	34.69	7	41.18	28	47.46	8	33.33
Totals	177	100.00	33	100.00	49	99.99	17	100.00	59	100.00	24	100.00
FOREHEAD SLOPE												
Submedium	93	52.84	20	60.61	21	42.86	3	25.00	6	10.71	1	4.76
Medium	71	40.34	11	33.33	24	48.98	7	58.33	38	67.86	15	71.43
Pronounced	12	6.82	2	6.06	4	8.16	2	16.67	12	21.43	5	23.81
Totals	176	100.00	33	100.00	49	100.00	12	100.00	56	100.00	21	100.00
NASION DEPRESSION												
Absent	1	0.57	2	6.06	1	2.08	..	..	..	..	..	..
Submedium	60	34.09	10	30.30	18	37.50	12	66.67	49	84.48	14	58.33
Medium	104	59.09	19	57.58	29	60.42	6	33.33	8	13.79	10	41.67
Pronounced	11	6.25	2	6.06	..	..	..	..	1	1.72	..	..
Totals	176	100.00	33	100.00	48	100.00	18	100.00	58	99.99	24	100.00
NASAL ROOT, HEIGHT												
Submedium	14	7.91	1	3.03	..	..	1	5.56	..	..	2	8.33
Medium	111	62.71	20	60.61	25	51.02	12	66.67	17	28.81	8	33.33
Pronounced	52	29.38	12	36.36	24	48.98	5	27.78	42	71.19	14	58.33
Totals	177	100.00	33	100.00	49	100.00	18	100.01	59	100.00	24	99.99
NASAL ROOT, BREADTH												
Submedium	14	7.95	4	12.12	5	10.20	..	..	8	13.57	3	12.50
Medium	110	62.50	23	69.70	35	71.43	16	88.89	42	71.19	17	70.83
Pronounced	52	29.55	6	18.18	9	18.37	2	11.11	9	15.25	4	16.67
Totals	176	100.00	33	100.00	49	100.00	18	100.00	59	100.01	24	100.00
NASAL BRIDGE, HEIGHT												
Submedium	5	2.83	2	6.06	..	..	..	..	8	13.57	..	..
Medium	98	55.37	18	54.55	19	38.78	5	27.78	12	20.34	6	25.00
Pronounced	74	41.81	13	39.39	30	61.22	13	72.22	47	79.66	18	75.00
Totals	177	100.01	33	100.00	49	100.00	18	100.00	59	100.00	24	100.00
NASAL BRIDGE, BREADTH												
Submedium	5	2.83	2	6.06	4	8.33	..	..	6	10.17	2	8.33
Medium	95	53.67	20	60.61	24	50.00	13	72.22	37	62.71	16	66.67
Pronounced	77	43.50	11	33.33	20	41.67	5	27.78	16	27.12	6	25.00
Totals	177	100.00	33	100.00	48	100.00	18	100.00	59	100.00	24	100.00

TABLE 57. EYE COLOR ANALYSIS (Continued)

	SYRIANS			ARMENIANS		
	Dark brown No. Percent	Light brown No. Percent	Mixed light No. Percent	Dark brown No. Percent	Light brown No. Percent	Mixed light No. Percent
NASAL PROFILE						
Concave	17 9.60	4 12.12	2 4.26	2 11.11	1 1.71	.. ..
Straight	28 15.82	11 33.33	7 14.89	5 27.78	19 32.20	9 37.50
Convex	102 57.63	14 42.42	33 70.21	11 61.11	37 62.71	13 54.17
Concavo-convex	30 16.95	4 12.12	5 10.64	.. ..	2 3.39	2 8.33
Totals	177 100.00	33 100.00	47 100.00	18 100.00	59 100.01	24 100.00
NASAL TIP, THICKNESS						
Submedium	20 11.30	6 18.18	5 10.42	.. ..	4 6.78	1 4.17
Medium	121 68.36	22 66.67	30 62.50	13 72.22	31 52.54	15 62.50
Pronounced	36 20.34	5 15.15	13 27.08	5 27.78	24 40.68	8 33.33
Totals	177 100.00	33 100.00	48 100.00	18 100.00	59 100.00	24 100.00
NASAL TIP, ELEVATION OR DEPRESSION						
Elevated	117 69.64	21 65.63	33 67.35	1 5.56	9 15.25	3 12.50
Horizontal	2 1.19	1 3.13	.. ..	4 22.22	8 18.56	8 33.33
Depressed	49 29.17	10 31.25	16 32.65	13 72.22	42 71.19	13 54.17
Totals	168 100.00	32 100.00	49 100.00	18 100.00	59 100.00	24 100.00
NASAL WINGS						
Compressed	5 2.89	3 9.38	8 16.67	2 11.11	5 8.47	3 12.50
Medium	127 73.41	20 62.50	33 68.75	5 27.78	41 69.49	13 54.17
Flaring	41 23.70	9 28.13	7 14.58	11 61.11	13 22.03	8 33.33
Totals	173 100.00	32 100.01	48 100.00	18 100.00	59 99.99	24 100.00
LIPS MEMBRANOUS, THICKNESS						
Submedium	47 26.70	13 39.39	19 38.78	9 52.04	19 32.76	11 47.83
Medium	99 56.25	19 57.58	28 57.14	7 41.18	39 67.24	12 52.17
Pronounced	30 17.05	1 3.03	2 4.08	1 5.88	.. ..	.. ..
Totals	176 100.00	33 100.00	49 100.00	17 100.00	58 100.00	23 100.00
MALARIS, PROMINENCE						
Submedium	70 40.70	13 40.63	20 40.82	3 20.00	5 8.62	3 13.04
Medium	88 51.16	17 53.13	25 51.02	3 20.00	33 56.90	8 34.78
Pronounced	14 8.14	2 6.25	4 8.16	9 60.00	20 34.48	12 52.17
Totals	172 100.00	32 100.01	49 100.00	15 100.00	58 100.00	23 99.99
OCCIPITAL PROTRUSION						
Absent	15 8.52	7 21.21	6 12.24	.. ..	.. ..	.. ..
Submedium	118 67.05	17 51.52	35 71.43	15 83.33	57 96.61	21 87.50
Medium	38 21.58	9 27.27	6 12.24	3 16.67	1 1.69	2 8.33
Pronounced	5 2.84	.. ..	2 4.08	.. ..	1 1.69	1 4.17
Totals	176 99.99	33 100.00	49 99.99	18 100.00	59 99.99	24 100.00
POSTCRANIAL FLATTENING						
Absent	11 6.29	1 3.03	3 6.12	1 5.56	2 3.39	2 8.33
Present	164 93.71	32 96.97	46 93.88	17 94.44	57 96.61	22 91.67
Totals	175 100.00	33 100.00	49 100.00	18 100.00	59 100.00	24 100.00

frequency of black hair, thicker eyebrows, smaller percentage of individuals having no concurrent eyebrows, the heaviest brow ridges, the highest foreheads, steeper foreheads, the greatest frequency of medium nasal root height and breadth, more concave profiles, the greatest percentage of flaring nostrils, more of the submedium lip thickness category, and finally more protruding occiputs.

In almost all particulars, the correlative associations of the above morphological observations confirm the conclusions derived from the analysis of the metrical data. The mixed light-eyed individuals display, in contrast to the other eye color divisions, specific trends towards more Nordic-like features by being less hairy, lighter in hair color, by showing less concurrency of the eyebrows, more sloping foreheads, deeper nasion depressions, thinner and less depressed noses, etcetera. This fact affirms, as previously suggested, the possession by this group of a Nordic strain.

The Mediterranean-Arab-Berber admixture is also verified in the dark brown-eyed group, by the greater association of the latter with curly hair, blacker hair, thicker eyebrows, more frequent concurrency of the eyebrows, high foreheads, submedium lip thickness, more protruding occiputs, etcetera.

If we pause to consider the final outcome of this eye color analysis, we find that *the basic element in this Armenian series is the light brown-eyed type*. Added to this basic type there are present in the population definite traces of Nordic as well as Mediterranean-Arab-Berber elements. What other racial types have entered this Armenian group is a question which is very difficult to judge. The relatively small size of the series prevents us from distinguishing them from the mass of the data. Often there appears the impression of an outcropping of some kind of East-Baltic strain, some Dinaric, and possibly some Caucasoid-Alpine blood. Whatever they are, nevertheless, one can be reasonably certain that they exist in the series in such small proportions as to make them for all practical purposes insignificant and unimportant.

The "Armenoid" Racial Type. The problem of exactly what constitutes the so-called "Armenoid" racial type is a question that has long harrassed the minds of many anthropologists. The analysis thus far of the Armenian series presents an opportunity for the successful elucidation of this delicate question, as well as for the determination of those features, metrical and morphological,

which may be said to represent the quintessence of the "Armenoid" type.

Pure racial types are usually identified and characterized by the possession of *combinations* of particular features, metrical and morphological, these features being exclusive to peoples of that racial stock. Occasionally, however, we meet with a race which exhibits one single specific character which marks it off from all other racial types. In this latter classification we may place the "Armenoid" type, because of the fact that it has such a distinctive feature. This feature is a depression of the nasal tip. No other "white" racial type shows this typically characteristic anatomical development. When present in significant magnitudes in any "white" group (apart from the old age factor), it may be accepted as signifying the admixture in prehistoric or historic times of an "Armenoid" strain.

Our Armenian series contains 67.32 per cent of individuals who show some degree of depression of the tip of the nose, and in this respect exceeds all other groups thus far studied. It is therefore obvious that this Armenian series must contain more "Armenoid" blood and represent purer "Armenoid" racial types than any other anthropometric series.

In order to discover what other features are associated with, and characteristic of, the Armenians with depressed nasal tips, I have sorted this series into two groups, one containing all the individuals showing elevated tips of the nose, and the other, all the individuals exhibiting the depressed type. In table 58 are presented and contrasted the means of the most important measurements and indices for these two groups, in addition to the percentages of the more vital morphological observations. A study of this table reveals the fact that metrically the group with the depressed nasal tip is somewhat taller in stature, shorter-headed, broader-headed, has a higher cephalic index, shows a lower mean head height, narrower frontal diameter, a greater facial breadth as well as facial height, a lower facial index, a higher mean nasal height, and a wider nasal breadth.

In observational features, the depressed nasal tip group differs from the contrasted elevated nasal group by possessing hair that is characteristically wavy (more low waves than deep waves), head hair that shows a greater frequency of dark brown and less of the black type, eyes that are mainly light brown but with a higher per-

TABLE 58. ARMENIAN NASAL TIP ANALYSIS

	Nasal Tip Elevation (18)	Nasal Tip Depression (68)	Dif.
Stature	165.07	166.81	-1.74
Head length	186.00	184.45	+1.55
Head breadth	157.31	158.41	-1.10
Cephalic index	84.77	86.04	-1.27
Head height	128.15	127.66	+0.49
Minimum frontal diameter	110.08	107.78	+2.30
Bizygomatic diameter	140.92	143.66	-2.74
Total face height	125.92	128.54	-2.62
Facial index	90.92	89.45	+1.47
Nose height	59.31	60.96	-1.65
Nose breadth	37.15	38.09	-0.94
Nasal index	62.85	62.52	+0.33
Bigonial diameter	109.85	109.96	-0.11
	Nasal Tip Elevation No. Per cent	Nasal Tip Depression No. Per cent	
HAIR FORM			
Straight	2 15.38	0 0.00	
Low waves	6 46.15	60 88.24	
Deep waves	4 30.77	7 10.29	
Curly	1 7.69	1 1.47	
Totals	13 99.99	68 100.00	
HAIR COLOR, HEAD			
Black	6 46.15	7 10.29	
Dark brown	6 46.15	46 67.65	
Red-brown	1 7.69	1 1.47	
Light brown	0 0.00	2 2.94	
Gray	0 0.00	12 17.65	
Totals	13 99.99	68 100.00	
EYE COLOR			
Dark brown	1 7.69	12 17.65	
Light brown	9 69.23	43 63.24	
Green-brown	3 23.08	6 8.82	
Gray-brown	0 0.00	5 7.35	
Blue brown	0 0.00	1 1.47	
Gray-blue	0 0.00	1 1.47	
Totals	13 100.00	68 100.00	
NASION DEPRESSION			
Absent	0 0.00	0 0.00	
Small	10 76.92	51 76.12	
Medium	3 23.08	15 22.39	
Pronounced	0 0.00	1 1.47	
Totals	13 100.00	67 99.98	
NASAL WINGS			
Compressed	3 23.08	7 10.29	
Medium	8 61.54	40 58.82	
Flaring	2 15.38	21 30.88	
Totals	13 100.00	68 99.99	

TABLE 58. ARMENIAN NASAL TIP ANALYSIS (*Continued*)

	Nasal Tip Elevation		Nasal Tip Depression	
	No.	Per cent	No.	Per cent
NASAL BRIDGE, HEIGHT				
Submedium	0	0.00	0	0.00
Medium	3	23.08	13	19.12
Pronounced	10	76.92	55	80.88
Totals	13	100.00	68	100.00
NASAL BRIDGE, BREADTH				
Submedium	4	30.77	5	7.35
Medium	7	53.85	42	61.76
Pronounced	2	15.38	21	30.88
Totals	13	100.00	68	99.99
NASAL TIP, THICKNESS				
Submedium	2	15.38	3	4.41
Medium	7	53.85	35	51.47
Pronounced	4	30.77	30	44.12
Totals	13	100.00	68	100.00
NASAL PROFILE				
Concave	0	0.00	2	2.94
Straight	5	38.46	16	23.53
Convex	7	53.85	49	72.06
Concavo-convex	1	7.69	1	1.47
Totals	13	100.00	68	100.00
LAMBDOID FLATTENING				
Absent	8	61.54	16	23.53
Present	5	38.46	52	76.47
Totals	13	100.00	68	100.00

centage of the dark brown variety, more flaring nostrils, more pronounced heights and breadths of the nasal bridge, thicker nasal tips, more convex nasal profiles, and a much greater frequency of lambdoid flattening.

If we consider the metrical features first, we notice that the characteristics of the depressed nasal tip group parallel those of the light brown-eyed individuals sorted out in table 55, by varying in the same direction from the elevated nasal tip group as do the light brown-eyed individuals from the rest of the series. The only exceptions to this rule are found in stature, minimum frontal diameter, and nasal breadth. In morphological features, the parallelism of the depressed nasal tip group with that of the light brown-eyed

individuals is perfect in practically every observation examined. There can be no doubt, then, from this metrical and morphological evidence, that the *light brown-eyed element in the Armenian population represents a generalized "Armenoid" racial type.*¹

On proceeding further in the "Armenoid" analysis to determine the characteristics of the "pure Armenoid" we find that, *on the basis of the morphological features of the depressed nasal tip and light brown-eyed groups*, each individual in order to receive a "pure Armenoid" designation should possess the following observational features.

- Hair Form — wavy
- Hair Texture — coarse to medium
- Hair Quantity, Moustache — moderate to pronounced
- Hair Quantity, Cheek — moderate to pronounced
- Hair Quantity, Jaw — moderate to pronounced
- *Hair Color, Head — black to dark brown
- Hair Color, Beard — black to brown
- *Eye Color — light brown to dark brown
- Eyebrows, Thickness — moderate to pronounced
- Eyebrows, Concurrency — present
- Forehead Slope — moderate to pronounced
- *Nasion Depression — moderate to no depression
- *Nasal Root Height — moderate to pronounced
- *Nasal Root Breadth — moderate to pronounced
- *Nasal Bridge Height — moderate to pronounced
- *Nasal Bridge Breadth — moderate to pronounced
- *Nasal Tip Thickness — moderate to pronounced
- *Nasal Tip Elevation — horizontal or depressed
- Nasal Wings — medium to flaring
- Lips, Integumental Thickness — moderate to pronounced
- Malar, Prominence — moderate to pronounced
- Gonial Angles — moderate to pronounced
- *Occipital Flattening — present
- *Occipital Protrusion — small or absent
- *Nasal Profile — straight, convex, concavo-convex

* Represents the most important characters.

Any individual exhibiting every single one of these 25 features may be said to represent a "pure" or "ultra-Armenoid" type. After sorting our Armenian series on this basis it was found that 18 out of 101 or 17.82 per cent of the series showed all of these

¹ Here the author wishes to reiterate his sense of obligation to Dr. Coon, whose anthropological acumen has provided this invaluable suggestion.

morphological criteria. The metrical characteristics of this "ultra-Armenoid group" of 18 individuals may be seen in table 59, where they have been contrasted with the total Armenian series.

TABLE 59. "ULTRA-ARMENOID" TYPE SORTED ON THE BASIS OF 25 MORPHOLOGICAL CRITERIA

	Total Armenians (101)	"Ultra-Armenoids" (18)	Diff.	\pm p.e.
Stature (cm.)	166.16	162.89	<i>-3.27*</i>	3.68
Head length	184.30	181.78	<i>-2.52</i>	2.46
Head breadth	157.90	159.83	<i>+1.93</i>	2.51
Cephalic index	85.81	88.06	<i>+2.25</i>	3.71
Head height	127.74	125.22	<i>-4.52</i>	3.86
Minimum frontal diameter	107.75	107.22	<i>-0.53</i>	0.73
Maximum bizygomatic diameter	142.84	145.00	<i>+2.16</i>	2.23
Total face height	127.96	126.59	<i>-1.37</i>	1.26
Facial index	89.74	86.94	<i>-2.80</i>	3.18
Nose height	59.93	60.61	<i>+0.68</i>	0.99
Nose breadth	37.96	38.89	<i>+0.93</i>	1.12
Nasal index	63.80	64.61	<i>+0.81</i>	2.13
Bigonial diameter	109.94	111.28	<i>+1.34</i>	1.90

* Significant differences italicized.

The first notable fact to be observed with respect to this comparison is that the "ultra-Armenoids" are markedly divergent from the total Armenian group, and accordingly must be recognized as an anthropometrically distinct population. This is supported by the analysis of the size of the differences, where it appears that 2 out of 10 measurements and 2 out of 3 indices show statistically significant differences, differences more than three times the size of their probable errors. The averages of the mean differences are also quite substantial, being 1.92 for the measurements and 1.95 for the indices. The "ultra-Armenoids" differ principally from the total Armenian series in exhibiting a shorter stature, a more brachycephalic index, a lower skull vault, a wider face and jaw, and a more mesorrhine nasal index.

If we consider the metric features of this specialized group as an entity and as a complement to the morphological criteria on which it was sorted, we shall have satisfactorily completed our final evaluation of the characteristics of the "pure" or "ultra-Armenoid" racial type. These metrical features permit the "ultra-Armenoids" to be described as a group of very short stature, short-headed, very

broad-headed, and hyperbrachycephalic. They possess in addition medium-low cranial vaults, medium-broad frontal diameters, broad faces, medium-high faces giving them a mesoprosopic facial index, very long noses, medium-broad noses, leptorrhine nasal indices, and, finally, fairly broad jaws.

GENERAL ANALYSIS OF THE SYRIAN MATERIAL

The reader will recall that in one of the previous sections of this paper a metrical comparison between the Syrians and Armenians showed numerous differences between the two groups. And further, a more detailed analysis of these differences demonstrated their statistical significance with respect to both measurements and indices. However, of fundamental importance is the fact that these dissimilarities manifested themselves in absolute dimensions, rather than in a wide divergence of indicial type. In all the essential measurements, with the exception of stature and head height, the Armenians display larger mean diameters than the Syrians. But in the indices these great disparities do not occur. The average difference between the two series is only 0.88 index units. Some of these differences in indices are statistically significant, but the fact that the actual magnitudes of the divergencies are so consistently small makes it apparent that the Syrians and Armenians are very similar in metrical *proportions*, irrespective of the differences in absolute dimensions.

In regard to the morphological observations, the differences between the Syrians and Armenians are more clearly portrayed. If we review the more important features examined, we find that in comparison with the Armenians the Syrians show a slightly higher percentage of individuals with a heavy development of head hair, a greater frequency of lighter beards, with general hair color inclining more to the black variety, more of the straight and curly types of hair form, and a greater percentage of individuals possessing hair judged to be of fine texture. The two groups are very similar in eyebrow thickness and eyebrow concurrency, but with respect to eye color the Syrians show an excess of the dark brown type and a deficiency of the light brown variety. The Syrians display deeper nasion depressions, nasal bridges that are not quite as high as among the Armenians but somewhat broader, while the frequency

of profile types is not divergent. The Syrians have thinner nasal tips, a much higher percentage of individuals with elevated nasal tips and septa, somewhat thinner integumental portions of the lip, while the membranous portions are contrastedly thicker and more pronounced, and associated with a greater development of the lip seam. Pronouncedly broad foreheads are more common among the Armenians, together with more sloping foreheads, more prominent brow ridges and glabellar regions. In temporal fullness as well as cheek fullness the Syrians show a much smaller percentage of the pronounced forms than the Armenians but more of the submedium and medium categories. And finally, the Armenians are characterized by less protruding occiputs and a much higher percentage of the more prominent form of malars.

The reader should not be misled by all this array of observational differences to suppose that in all cases these differences are very large and hence important. Unquestionably, divergencies between the Syrians and Armenians occur which are statistically significant. However, a close examination of the observation tables will show that it is only in a number of instances that these differences assume a radically divergent character. It is more in line with the evidence of the material on hand to state that in regard to morphological criteria the Syrians and Armenians display fundamental similarities. This fact, considered in conjunction with the results of the metrical comparison, wherein the two groups show like metrical proportions, seems to point to the conclusion that in a broad, general way, the Syrians show similarity with the Armenians. Or, to put the matter in a more proper relation, an "Armenoid" element can be seen to form the basic strain of the Syrian population.

This assertion of the presence of an "Armenoid" substratum in the Syrian population is further suggested by the following evidence. It was thought that if it were true that the basic strain of the Syrians was Armenoid, then a moderate number of individuals in the series should not only show those particular distinctive features of the Armenoids, but should show these characteristic "Armenoid" features in combination. Accordingly, the Total Syrian series was sorted on the basis of the twelve most important Armenoid morphological characters, listed on page 66 as follows:¹

¹ An attempt to sort for "ultra-Armenoids" on the basis of the 25 characters gave us 6 individuals out of 256 or 2.34 per cent.

Hair Color, Head — black to dark brown
Eye Color — light brown to dark brown
Nasion Depression — moderate to no depression
Nasal Root, Height — moderate to pronounced
Nasal Root, Breadth — moderate to pronounced
Nasal Bridge, Height — moderate to pronounced
Nasal Bridge, Breadth — moderate to pronounced
Nasal Tip, Thickness — moderate to pronounced
Nasal Tip, Elevation — depressed or horizontal
Occipital Flattening — present
Occipital Protrusion — small or absent
Nasal Profile — convex, concavo-convex, or straight

It was found that 62 out of 265 or 23.40 per cent of the individuals of the Total Syrian series exhibit all twelve of these important morphological Armenoid characters. These individuals have been designated by the name of Syrian "Armenoids." The import of this sorting is very clear. Here we have a population one element of which is present in such a strong proportion that about one out of every four individuals shows that peculiar combination of features by which the element is identified. The appearance of this element in such a relatively large proportion is a condition which could be expected to occur only if the aforesaid element was one of the basic strains of the population. How intimately the Armenoid element has become a part of the whole Syrian complex may best be seen in the extraordinary similarity in metrical features between the Syrian "Armenoids" and the Total Syrian series.

The means of the most important measurements and indices of the 62 Syrian "Armenoids" have been tabulated and compared with similar means of the Total Syrian series and presented in table 60. The reader may now observe how strikingly alike the two groups are in metrical characteristics. With the exception of stature and head length, there are no appreciable differences. The Syrian "Armenoids" may be considered statistically as a random sample of the total population in regard to its metrical features. If they differ at all, it is in a shorter stature, a slightly more brachycephalic cranium and a more leptorrhine nose. Where there are divergencies they vary, in the majority of cases, in the same direction as the differences between the Armenians and Total Syrian series. In 8 out of 12 instances this was found to be true. However, this fact does not disturb the obvious conclusion that the Armenoid element

in the Syrian population is such an integral part of the group that it cannot be metrically differentiated from the total series.

If we inquire into the distribution of the Syrian "Armenoids" in the various provinces of that country, we find that there are proportionately fewer "Armenoids" in Lebanon than in the total series. Alawiya is more strongly represented in the Syrian "Armenoids" than in the total series, Homs-Hama-Aleppo contains less, and Damascus more. On the whole, however, the distribution is moderately regular for all the provinces.

TABLE 60. ARMENOID TYPE AMONG THE SYRIANS SORTED ON THE BASIS OF TWELVE MORPHOLOGICAL CHARACTERS

	Total Syrians (265)	Syrian "Armenoids" (62)	Diff.
Stature (cm.)	167.19	165.12	-2.07
Head length	183.06	181.17	-1.89
Head breadth	155.47	155.05	-0.42
Cephalic index	85.11	85.68	+0.57
Head height	127.77	127.56	-0.21
Minimum frontal diameter	106.82	106.82	0.00
Total face height	122.90	123.55	+0.65
Bizygomatic diameter	138.85	138.80	-0.05
Facial index	88.58	88.82	+0.24
Nose height	55.22	55.54	+0.32
Nose breadth	34.76	34.85	+0.09
Nasal index	63.26	62.54	-0.72
Bigonal diameter	107.62	107.90	+0.28

DISTRIBUTION OF SYRIAN "ARmenoids" ACCORDING TO PROVINCIAL DESIGNATIONS

	Total Syrians	Syrian "Armenoids"	
		Per cent	No.
Lebanon	64.82	55	57.38
Alawiya	20.95	18	29.51
Damascus	6.72	5	8.20
Homs-Hama-Aleppo	7.51	3	4.92
Total		61	

Eye Color Analysis. In the search for other than "Armenoid" elements in the Syrian population we may turn to the eye color complex, in the hope that this line of inquiry may furnish further indications and more direct forms of evidence. To such an end the Syrian series has been resolved into three categories of eye color, — dark brown, light brown, and mixed light-eyed individuals, —

in the same manner as was previously carried out in detail for the Armenian series. (Cf. table 57.) And again, following the Armenian example, for each of these eye color groups the means of the measurements and indices have been calculated and tabulated in table 61.

If we examine first the light brown-eyed class of individuals (the smallest group of all), we find that it sorts into a separate type similar to that found for the light brown-eyed Armenians, except that in the case of the Syrians this type does not appear as sharply defined. The light brown-eyed Syrians do follow the light brown-eyed Armenians in having the shortest head lengths, the highest cephalic indices, the lowest skull vaults, the widest frontal diameters, the widest faces, and broadest jaws. But instead of showing the smallest statures and widest heads, the light brown-eyed Syrians are intermediate in both respects to the dark brown and light-eyed classes. Instead of having the longest faces and lowest mean nasal index, they exhibit the shortest faces and the highest mean nasal index. In the Armenian series the light brown-eyed group was identified as "Armenoid"; in the case of the Syrians a similar designation appears to be in accord with the evidence, with the reservation that in regard to the light brown-eyed Syrians the "Armenoid" element is not as characteristically "pure" as for the light brown-eyed Armenian group.

Among the Syrians, the mixed light-eyed group shows the tallest statures, the broadest and highest heads, the longest faces, the highest and narrowest noses, and the most leptorrhine index. In head length, cephalic index, frontal diameter, face width, and bигonial diameter, this group is intermediate in position between the light brown-eyed and dark brown-eyed series. What we have appearing here is the Nordic strain in the Syrian population, but this strain does not come out as strongly on the basis of metrical characters as it did in the Armenian series. It seems that in the Syrians there is less of the Nordic blood, the mixed light and light-eyed individuals containing more of the East Baltic and Noric strains.

The dark brown-eyed Syrians, on the other hand, show the same general tendencies as the dark brown-eyed Armenians but accentuated to a more marked degree. In addition to presenting, as the comparable Armenian group did, the narrowest heads, the narrowest faces, and the shortest and broadest noses, they also display the

TABLE 61. METRICAL EYE COLOR ANALYSIS

		SYRIANS	
	Dark brown (177)	Light brown (33)	Mixed light (49)
Stature	166.95	167.55	167.91
Head length	183.48	181.65	182.70
Head breadth	155.08	156.01	156.40
Cephalic index	84.63	86.47	86.01
Head height	127.56	127.44	128.61
Minimum frontal diameter	106.46	108.82	106.74
Bizygomatic diameter	188.50	139.75	139.10
Total face height	122.85	122.30	123.90
Facial index	88.82	88.70	88.82
Nose height	55.02	55.42	55.90
Nose breadth	34.88	34.82	34.46
Nasal index	63.50	63.58	61.90
Bigonal diameter	107.30	108.58	107.82

DIFFERENCES BETWEEN MEANS

	Light brown vs. Dark brown	Light brown vs. Mixed light	Dark brown vs. Mixed light
Stature	+0.60	-0.36	-0.96
Head length	-1.83	-1.05	+0.78
Head breadth	+0.93	-0.39	-1.32
Cephalic index	+1.84	+0.46	-1.38
Head height	-0.12	-1.17	-1.05
Minimum frontal diameter	+2.36	+2.08	-0.28
Bizygomatic diameter	+1.25	+0.65	-0.60
Total face height	-0.55	-1.60	-1.05
Facial index	-0.12	-0.12	0.00
Nose height	+0.40	-0.48	-0.88
Nose breadth	-0.06	+0.36	+0.42
Nasal index	+0.08	+1.68	+1.60
Bigonal diameter	+1.28	+0.76	-0.52

lowest statures, by far the lowest cephalic indices, and the narrowest jaws. However, in head height, face height, and nasal index, they occupy an intermediate position between the light brown and mixed light-eyed groups. The association of dark brown eyes with the most dolichocephalic index, the narrowest faces, the shortest and broadest noses and the narrowest jaws, suggests again a generalized Mediterranean-Arab-Berber admixture, but here on a very much larger scale than among the Armenians.

The analysis of the morphological features of the same eye color groups further supports those deductions already advanced in regard to the metrical characteristics. The dark brown-eyed individuals in comparison with the light brown and mixed light-eyed

groups show, in general, the heaviest beards, more plentiful body hair, a greater percentage of the wavy hair forms, more of the black and less of the light hair colors, a greater frequency of concurrent eyebrows, the narrowest foreheads, nasal roots that are the lowest and also the widest, more of the concavo-convex nasal profiles, the greatest frequency of the moderately flaring class of nasal wings, thicker lips, and the most protruding occiputs. There is no doubt, therefore, on the basis of such strong observational support for the metrical data, that the dark brown-eyed Syrian group contains a strong generalized Mediterranean-Arab-Berber admixture, and also that in the Syrians it is found to a much greater extent than in the Armenians.

The mixed light-eyed group has straighter hair, less of the black and more of the mixed light hair color, thinner eyebrows, more of the submedium and medium categories of brow ridge development, the highest noses in regard to both the root and bridge, more of the convex profiles, and finally a greater frequency of the compressed form of nasal wings and less of the flaring type. Again the examination of the more important morphological features confirms the conclusions offered by the metrical survey, that the Nordic strain present in the Syrian population is visible in the mixed light-eyed group.

The light brown-eyed group of Syrians is not very clearly defined by the observational data, but its general characteristics and its close similarity to the total series make it evident that this group represents the generalized "Armenoid element" in the Syrian population.

Our final problem in this Syrian analysis is to discover which provincial districts have the largest representation of the component elements of the Syrian population. We have previously seen that there were numerous significant differences in both metrical and morphological characteristics between the various geographical districts. There can be no doubt that these regional differentiations must be for the most part interpreted on a racial basis. Accordingly, if our deductions have been at all correct, such distinctions should correlate closely with the racial elements already designated. This they do with unusual accuracy. Without burdening the reader with a long and detailed examination of the data involved, the results can be summarized as follows. The Mediterranean-Arab-

Berber element is most highly represented in the Damascus district. This district has the largest percentage of the dark brown-eyed individuals, and in addition differs from the other areas in being shortest in stature, longer-headed, narrower-faced, shorter-nosed, broader-nosed, narrower-jawed, etcetera. The Nordic element, on the other hand, is most highly represented in the Homs-Hama-Aleppo district. Here we find the greatest frequency of the mixed light-eyed group, with the tallest statures, the highest heads, by far the longest faces, longest noses, narrowest noses, and the like. And finally, the "Armenoid" element is strongest in the Lebanon and Alawiya provinces, as shown in part by the preponderance in the latter districts of the light brown-eyed individuals. Moreover, the characteristics in which these latter provinces differ from the rest of Syria are extraordinarily similar to those features by which the "Armenoid" element has been segregated from the population as a whole.

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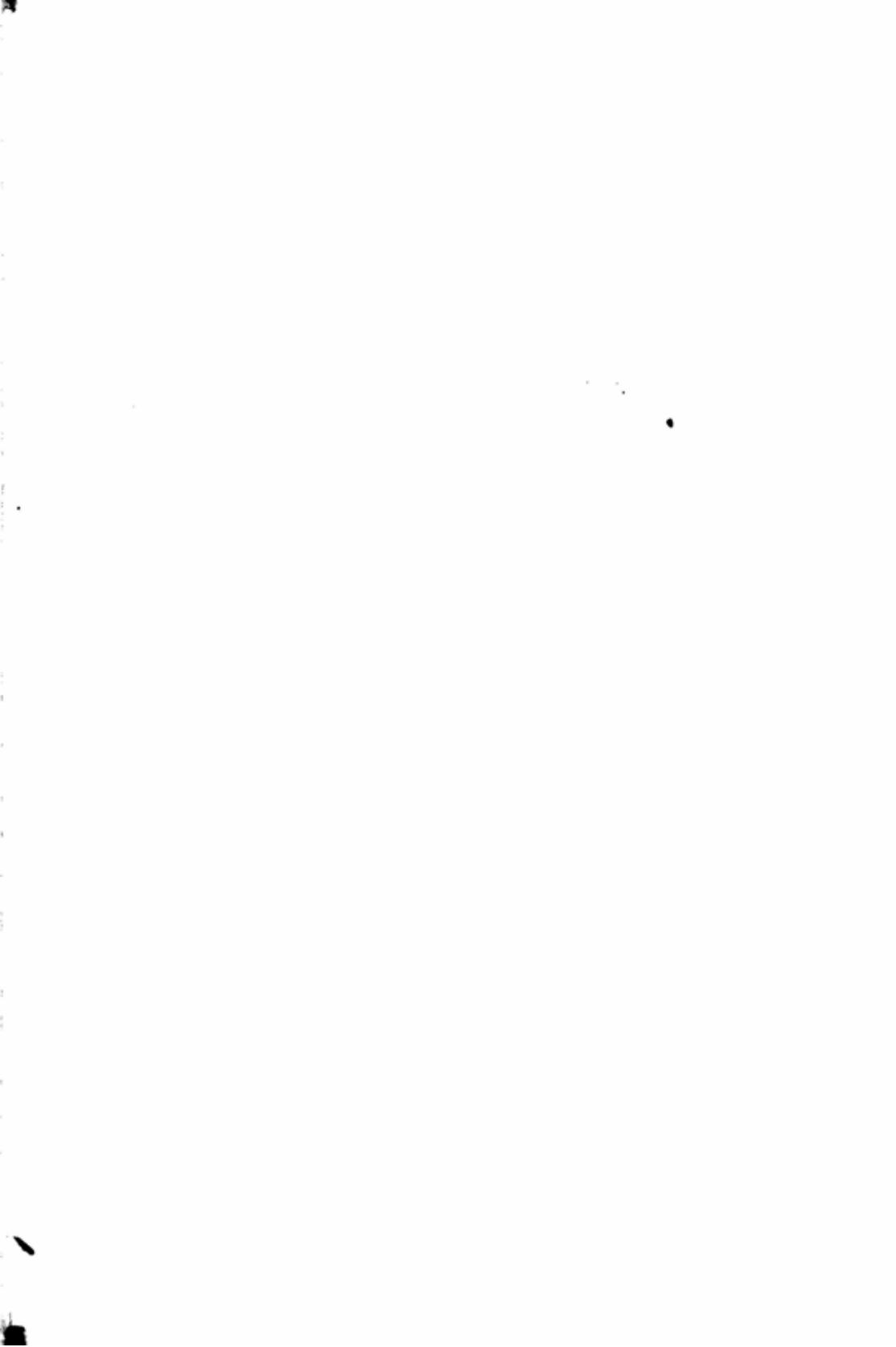
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